



*Controller System*

**JUNIOR**

***Installation  
Manual***

*(Vers. 1.6 – English)*

**SAFETY NOTES****➤ INSTALLATION**

The control panel must be installed internally with a degree of pollution of not more than 2.

The cabinet has an IP2X degree of protection.

The controller setup and maintenance has to be made by qualified technicians after having carefully read the documentations and electrical schemes provided with the controller.

Protection toward indirect contacts has to be realized through magnetothermic and differential switches and a grounding system. Unless otherwise specified, the customer is requested to provide these protections.

Please refer to the wiring diagram supplied with the control panel for the following protection circuits:

- magnetothermic protection of the motor circuit
- magnetothermic protection of the safety circuit
- protection fuses of all other circuits

Protection measures against electric shock:

- The control panel case of the is metallic and must be grounded as indicated in the circuit diagram supplied with the control panel.
- The command and control circuits (24V) are galvanically separated from the main power supply as indicated in the wiring diagram supplied with the control panel.
- The safety circuit is galvanically separated from the main power supply as indicated in the wiring diagram supplied with the control panel.

**➤ MAINTENANCE**

For control panel's maintenance, please refer to the manual supplied with the control panel. During periodic inspections of the system, check the alarm circuits' battery status of the and the floor return circuit (if present).

Refer to the packaging instructions to handle and move the control panel.



## Docuement References

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Approved by:		

## Document Changes

Description of Changes	References
Correct procedure for temporary operations	Rev. 0.0
Various updates	Rev. 0.1
Various updates	Rev. 0.2
Various updates and addition of chapters "Shaft access" and "Motor Tuning"	Rev. 0.3
Appendix A – USB-based SW updating procedure	Rev. 0.4
Kit QJR.KIMP	Rev. 0.5
Connection of car key switch	Rev. 0.6
List of parameters (§ 4.2, 4.3, 4.4)	Rev. 0.7
Connection of modem and emergency telephone	Rev. 0.8
RSP monitor fault (§ 3.3, § 3.4) – Appendix B	Rev. 0.9
Motor Tuning (§ 2.2.2, § 4.7)	Rev. 1.0
Troubleshooting table (§ 3.4)	Rev. 1.1
Troubleshooting table (§ 3.4)	Rev. 1.2
Junior HYDRO updates (§ 1.1, 2.1, 2.2.1, 2.3.1, 2.3.2, 2.4.1, 2.4.3)	Rev. 1.3
Layout VVVF	Rev. 1.4
Various updates (§ 2.3.1, 4.4, 4.6, 5.2.3)	Rev. 1.5
Menu "configuration" > Re-levelling (§4.3)	Rev. 1.6

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- The information in this manual may vary without notice for any enhancements.



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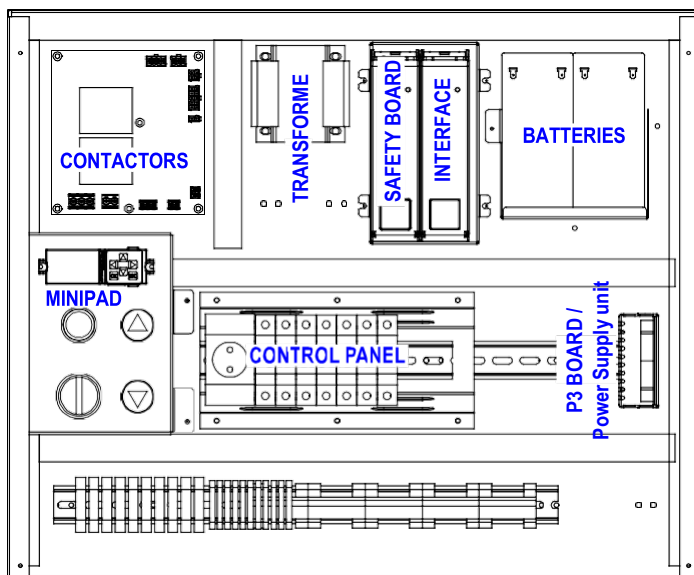
## 1. JUNIOR Pre-wired System

The pre-wired electric system for homelift and moving platforms *JUNIOR* by DMG is composed of:

- Controller unit (Hydro or VVVF electric)
- Shaft wiring Kit
- Pre-wired car and hall operating panels

### 1.1 JUNIOR System for Hydraulic homelifts (HYDRO)

#### 1.1.1 Layout



cod.: QJR.BMHT



Dim.: 635x520x210mm

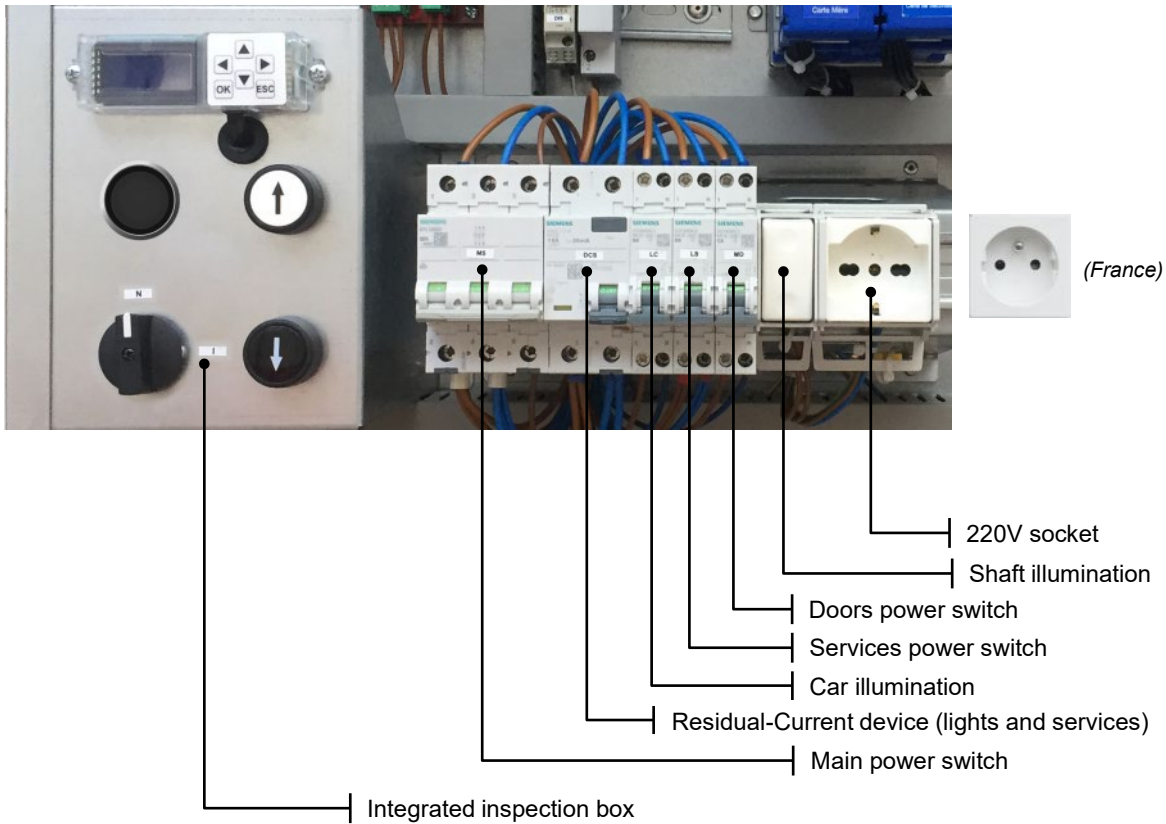
#### 1.1.2 Technical characteristics

- Controller for hydraulic pumps (1 or 2 speeds, max 2,2 kW)
- Programmable electronic motherboard with 32bit micro-processor
- Type of operation: constant pressure, SAPB or mixed (SAPB at floors, constant pressure in the car)
- Up to 7 stops (6 if mixed operation), 1 or 2 access
- Manual, bus-type or 24V DC automatic regulated car doors management
- 2 Batteries 12V at 7 Ah with integrated battery charger

#### 1.1.3 Main functions

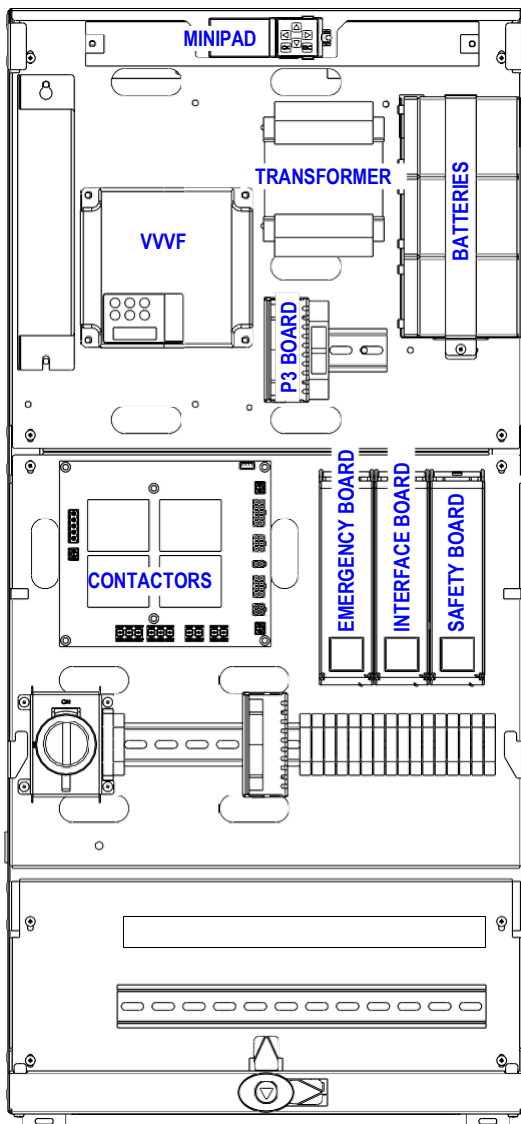
- Serial bus piloting (CAN BUS for the car, DMG 4-wires at floors)
- Car / hall programmable position indicators
- Advanced diagnostics through LCD display (last 60 errors)
- Car here / Busy / Registration indicators (fixed or flashing)
- Re-levelling at floor (with open/closed doors)
- Timed car illumination
- Short floor management
- Programmable return to designated floor
- Integrated emergency operation with automatic return to lowest floor and door opening
- Remote monitoring through PSTN line or GPRS network

**1.1.4 Integrated inspection box and switchboard**

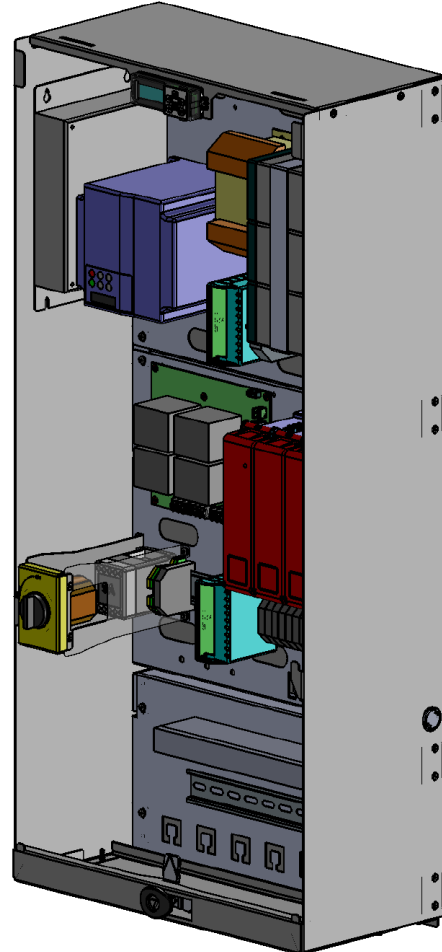


## 1.2 JUNIOR System for VVVF homelifts (VVVF)

### 1.2.1 Layout



cod.: QJR.BMVF18 (1.8kW)  
 cod.: QJR.BMVF22 (2.2kW)  
 cod.: QJR.BMVFML (2.2kW Gearless)



Dim.: 423x900x210mm

### 1.2.2 Technical characteristics

Same features and functions as the HYDRO Junior, except:

- Quadro elettrico compatibile con motori geared e gearless fino a 2,2 kW
- Integrated Emergency System (optional) with automatic return to floor and door opening

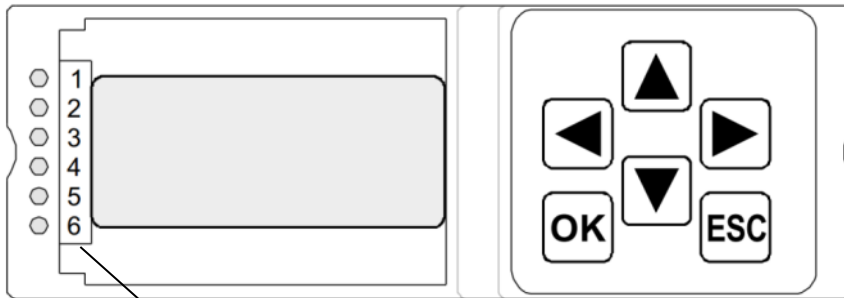
### 1.2.3 Main functions

Same features and functions as the HYDRO Junior.



### 1.3 Use of MINIPAD programming module

With its function keys and LCD screen, the MINIPAD module allows to see the status of the lift, access the diagnostics, view and modify all controller parameters.

**Status LEDs:**

- 1:** Point 1 safeties (car stop, pit stop, rope slack)
- 2:** Point 2 safeties (extra run, shaft access control)
- 3:** Point 3 safeties (landing door preliminary contacts)
- 4:** Point 4 safeties (landing door locks)
- 5:** Point 5 safeties e (car door contact)
- 6:** Status OK if permanently lit, active error when flashing,

### 1.4 Integrated Emergency System

The JUNIOR controller is equipped with an integrated emergency system which moves automatically the car to floor and opens doors (if automatic) in case of power failure.

This device is always present in Hydro Junior systems and is considered as (strongly recommended) optional in VVVF Junior (Part number: QJR.EMVF).

#### *Emergency Procedure for Hydro Junior:*

- The controller is re-powered with the emergency batteries;
- If the car is not at floor, it is moved to lowest floor at reduced speed;
- Once lowest floor is reached, doors are opened (if automatic) and the system remains active for 30 seconds;
- After 30 seconds, the system is shut down.
- During the emergency procedure, all displays show the symbol “E-”.

#### *Emergency Procedure for VVVF electric Junior:*

- The controller is re-powered with the emergency batteries;
- If the car is not at floor, it is moved to nearest floor at reduced speed;
- Once lowest floor is reached, doors are opened (if automatic) and the system remains active for 30 seconds;
- After 30 seconds, the system is shut down.
- During the emergency procedure, all displays show the symbol “E-”.

## **1.5 Door and Safeties**

The JUNIOR controller can manage the following combinations of car and landing doors (see also the Door Menu (§ 4.4), parameters “Door A Type” and “Door B Type”):

### **MANUAL car & landing doors:**

In such configuration, the landing door can be unlocked:

- By a mechanical device (cam)
- By an electro-mechanical device (electromechanical lock).

In the second case, the controller must be equipped with a dedicated device to control the landing electromechanical locks (Part number: QJR.BSES).

In case of no car door, the (mandatory) light cell must be connected to the safety chain (NC contact).

### **SEMI-AUTOMATIC doors (automatic car doors and manual landing doors):**

In such configuration, the landing door can be unlocked as in the previous case.

The optional light door in the car must be connected to the door operator (NO contact).

### **AUTOMATIC car and landing doors:**

This configuration implies the presence of one or more 24V DC door operators. Optional light cells must be connected to door operators (NO contacts).

### **MOTORIZED landing doors with electric lock:**

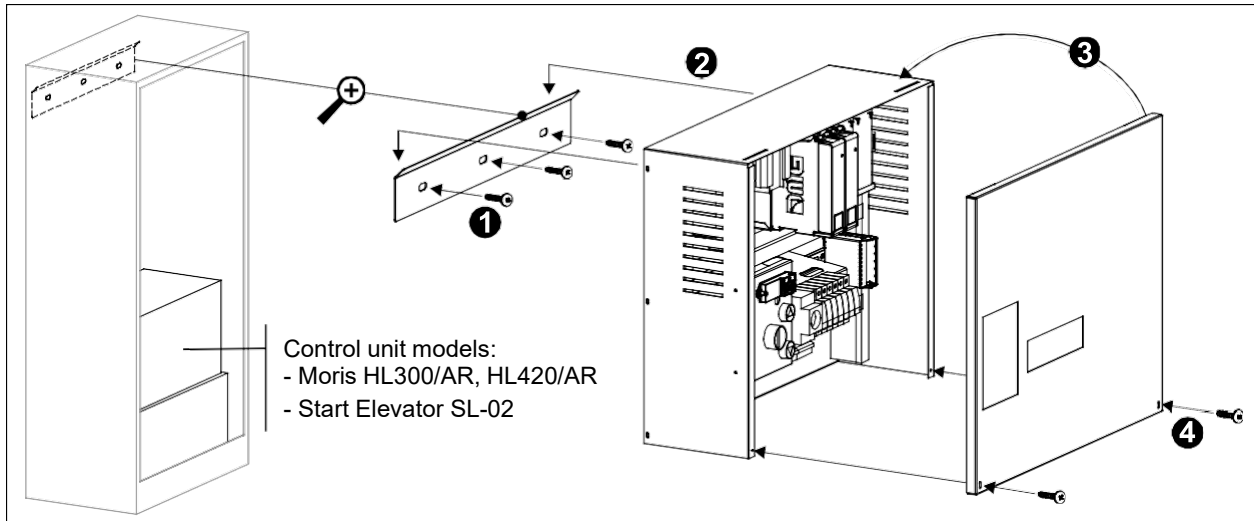
This configuration includes the use of swing doors automatically opened by a motorized drive and locked by an electric lock.

## 2. Quick Installation Guide

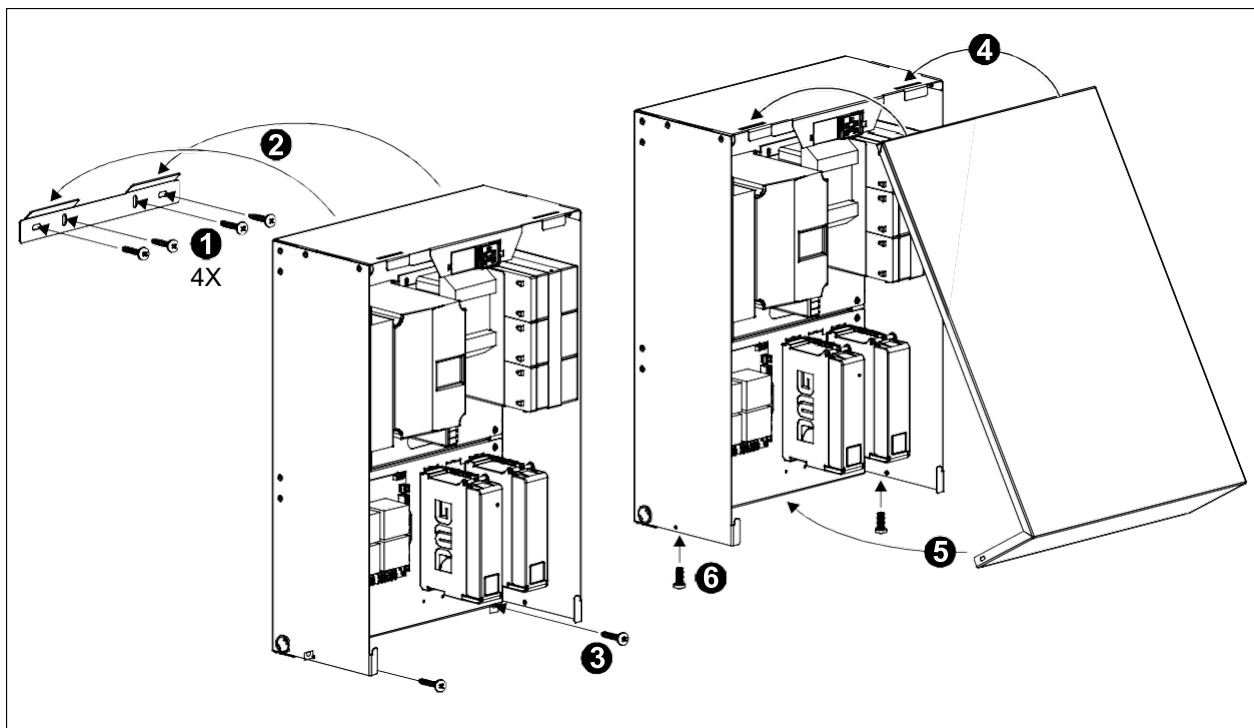
For the first installation of the Junior controller follow these instructions:

### 2.1 Installation of the controller

- HYDRO JUNIOR



- VVVF ELECTRIC JUNIOR



- The JUNIOR controller is equipped with a key (optional) to lock the external cover lid.

## 2.2 Main connections and Temporary Operations

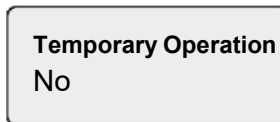
### 1. Connect:

- Main Power Supply (“ALI” connector – Junior VVVF)  
(screw terminal PE/N/L – Junior HYDRO)
- Traction motor / Hydro pump (“MOTOR” connector – Junior VVVF)  
(screw terminal U/V – Junior HYDRO)
- Brake / Valves (“VALV” connector – Junior VVVF)  
(screw terminal V-DW / V-HS / V-COM – Junior HYDRO)
- Temperature sensor (connectors TH2/TH1 on INT J board – Junior VVVF)  
(screw terminal THM2 / THM1 / GND – Junior HYDRO)
- The inspection box for temporary operations:

- Use the one provided in the package or, alternatively, a third party one, to be connected to boards SEC J and INT J (Junior VVVF)
- Connector REV (Junior HYDRO)

### 2. Switch on main power

3. Set the “Temporary Operation” mode from the MINIPAD: enter the “Installation” menu with ▼ key and press **OK** twice to access and modify the parameter “Temporary Operation”:



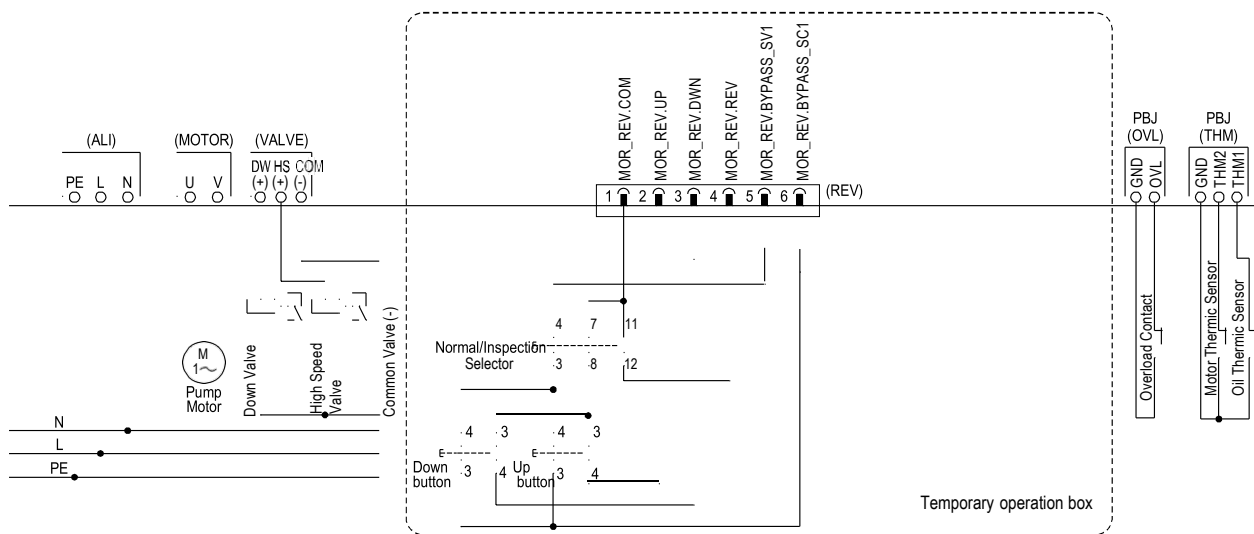
4. Press ► and then **OK** to select “Yes”

### 2.2.1 Hydro JUNIOR

JUNIOR HYDRO controller is pre set for the following control unit models:

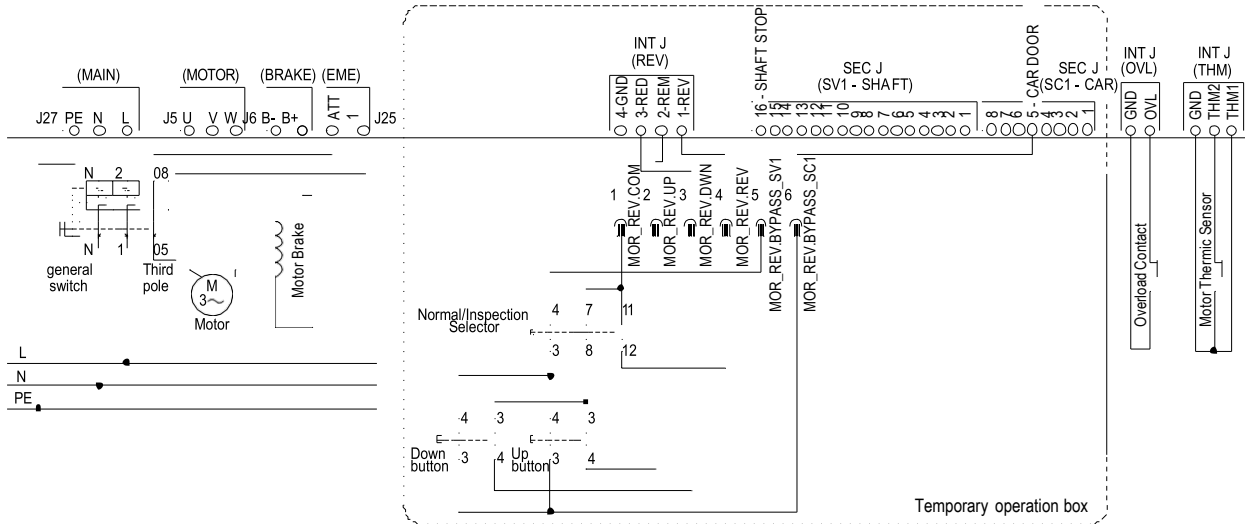
- 1) Moris HL300/AR, HL420/AR - 2) Start Elevator SL-02

#### Wiring schematics



**2.2.2 VVVF electric JUNIOR**

Wiring schematics



TUNING PROCEDURE

- Enter the following motor parameters in the VVVF unit:
  - F03 (Max motor Frequency)
  - F04 (Rated Frequency)
  - F05 (Rated voltage)
  - P02 (Rated Power)
  - P03 (Rated Current)
- Access the <Installation> menu from the MINIPAD and press Enter.
- Access the “Temporray Operation” parameter and press Enter (flashing value)
- Press ► twice to modify the value to “Tuning”; Press Enter;
- In the VVVF unit, set Parametro P04 to 1 (start tuning) and press Func/data: The '1' value on the display of the VVVF starts blinking;
- Press and hold ► on the MINIPAD to enable the contactors; the '1' value on the display of the VVVF turns fixed
- Wait for the end of the tuning procedure: "End" is showed on the VVVF display;
- Release the ► key on the MINIPAD: the value on screen is now “Yes” (Temporary Opeation).

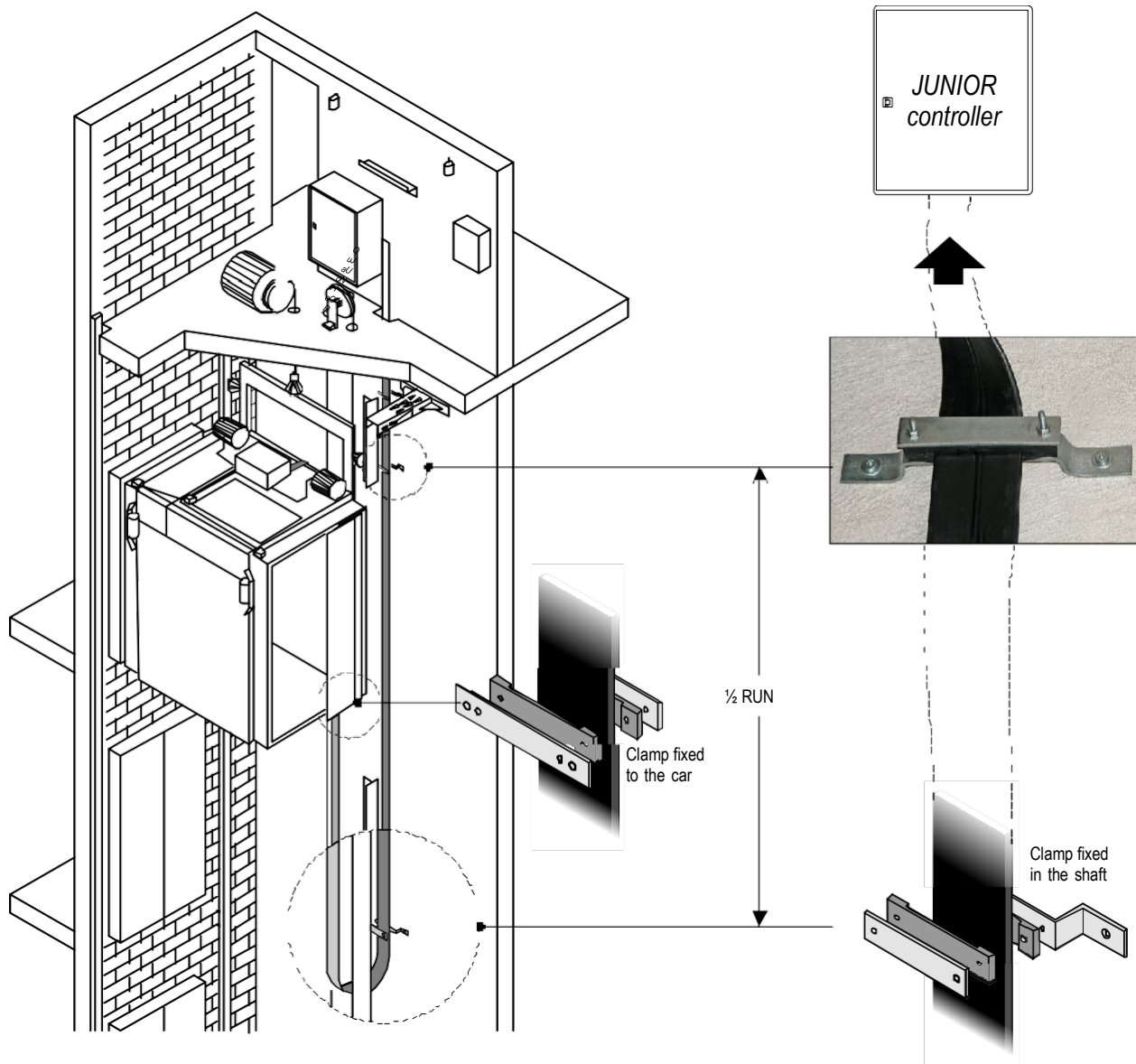
The end of the safety chain must be closed.

Note: when in Tuning mode for more than 1 minute, the system automatically returns to Temporary Operation mode.

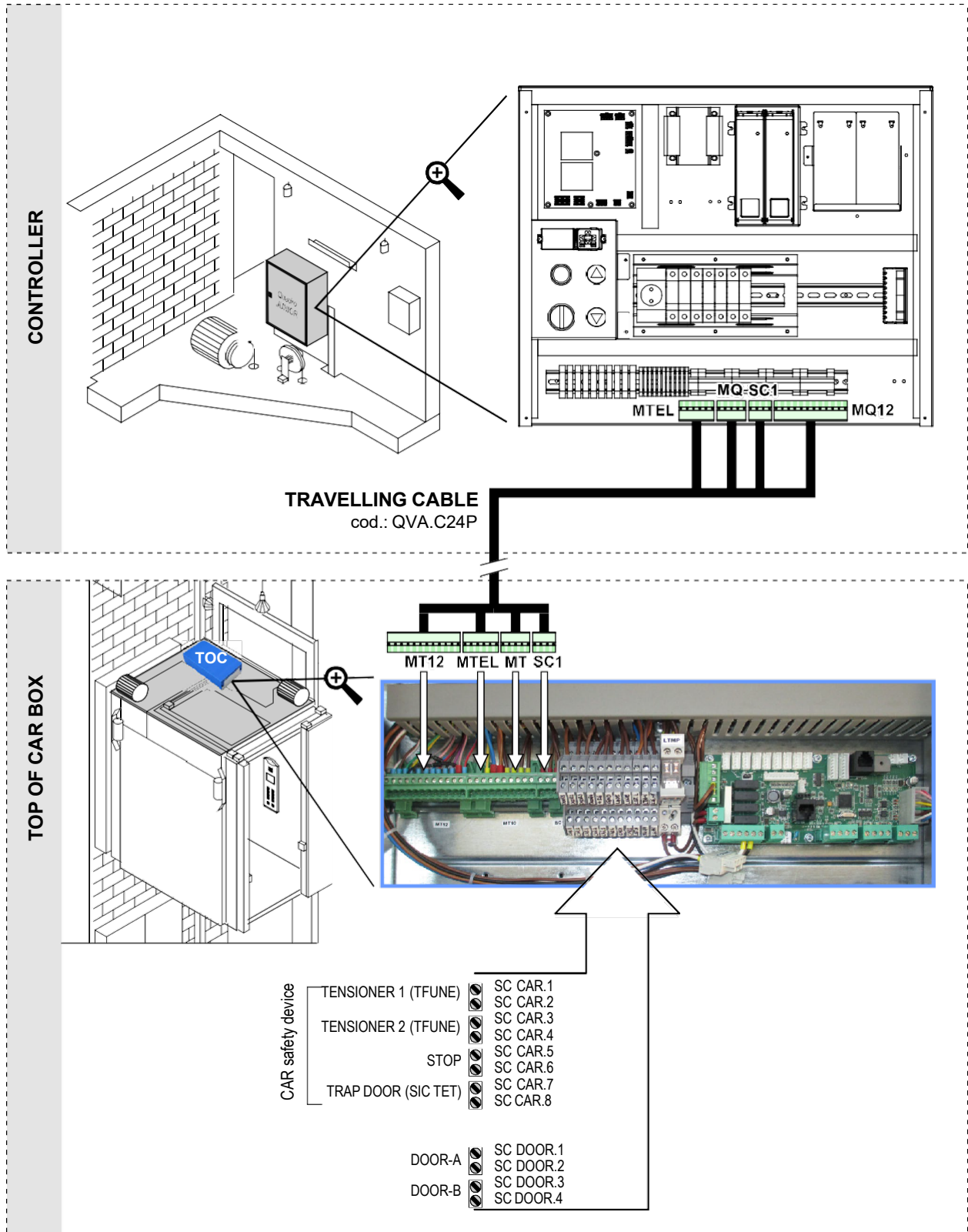
## 2.3 Connection of pre-wired components in the Car

### 2.3.1 Travelling cable (Lengths: 12, 15 or 18m)

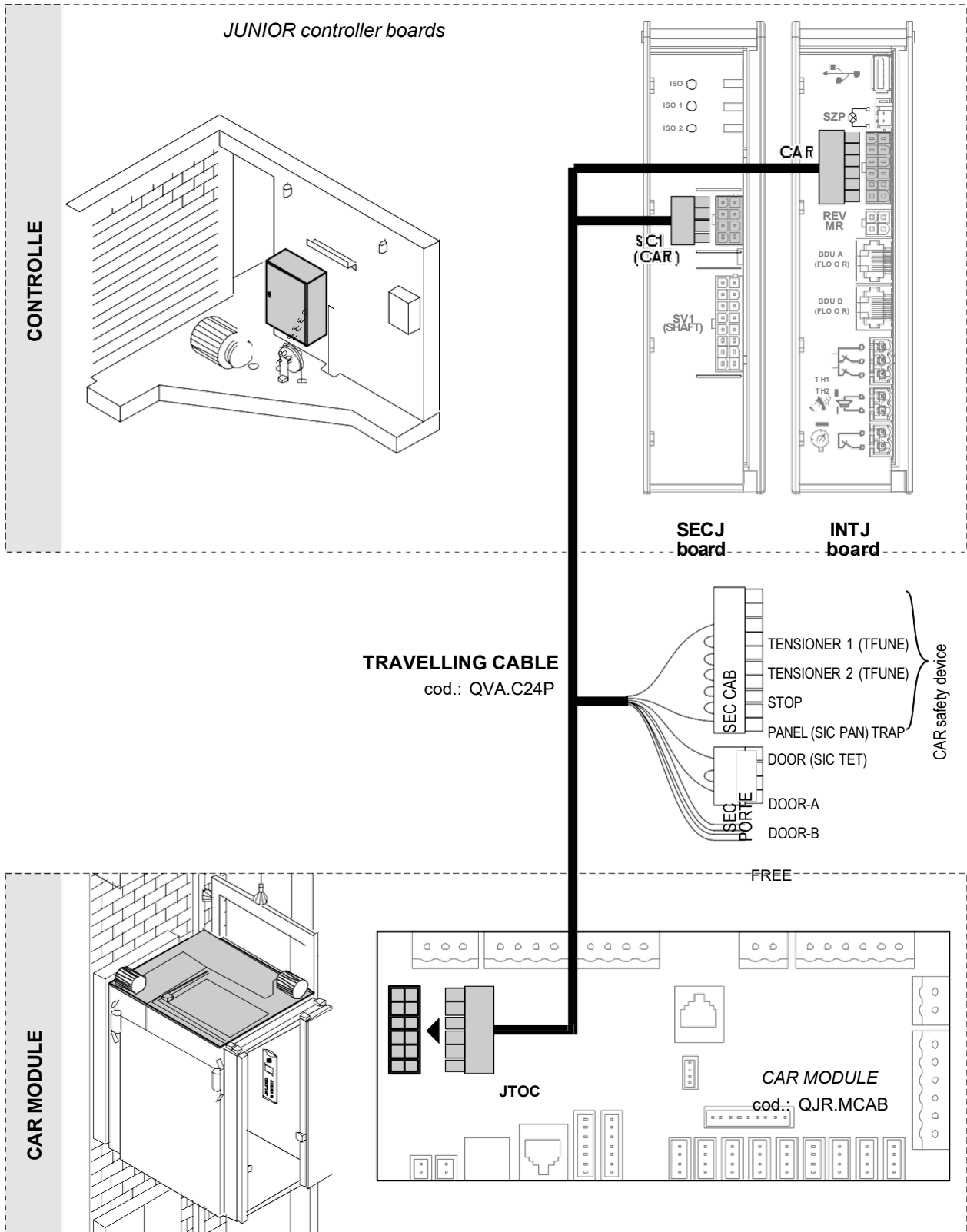
#### Installation



HYDRO JUNIOR Connections



VVVF ELECTRIC JUNIOR Connections





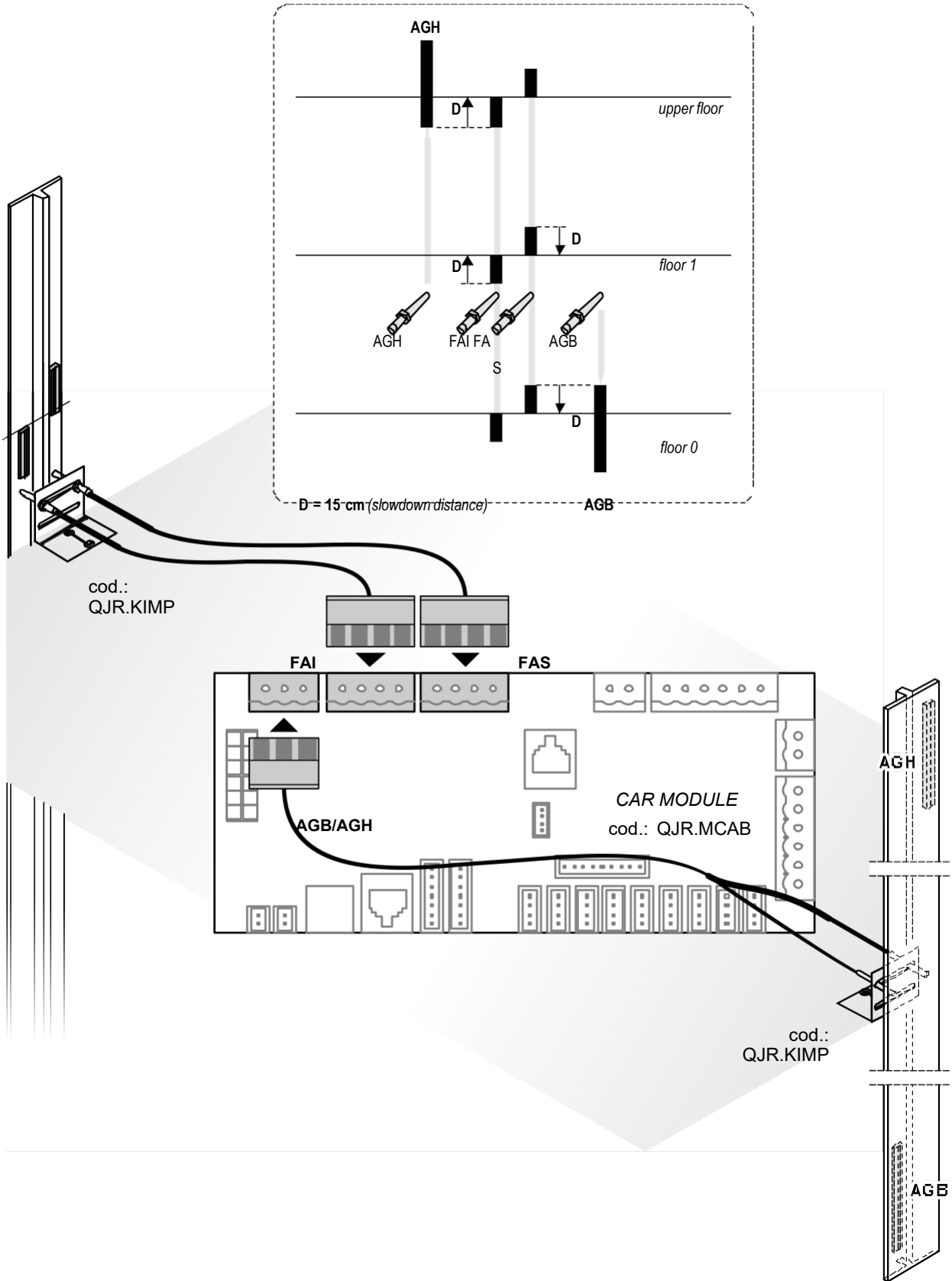
### 2.3.2 Car module

The Junior Car Module (QJR.MCAB) is connected to the controller through the travelling cable QVAC24Pxx. The following devices must be connected to this module:

- JUNIOR Sensor Kit (QJR.KIMP), composed of:
  - Magnetic Counting system (“FAI/FAS”): 2 x NO magnetic sensors
  - High speed and reset limit switches (“AGB/AGH”): 2 x NO magnetic sensors
- Wiring Kit for pre-wired car panel:
  - QJR.KIMP
  - QJR.CC1F (1,5mt) / QVA.C04P4BDX (4mt.)

#### 2.3.2.1. Connection of counting system and limit switches

Connect the QJR.KIMP kit as indicated in the picture and position the magnetic strips (QTC.CAL) on the guidrails as illustrated in Fig. 1; in the case of pre-opening doors, refer to the indications given in section 5.2.3



(Fig. 1)

**2.3.2.2. Connection of the car door safeties**

Connect the car door safety contact (included in the car panel Kit QJR.KIMP) as indicated in Picture 2.

**2.3.2.3. Connection of door operators (lifts with automatic doors)**

JUNIOR controller manages 24VDC automatic door operators (mod. Fermator 40/10)

- Fermator 40/10
- ECC (folding door)

Fig. 2a (with TOC box)

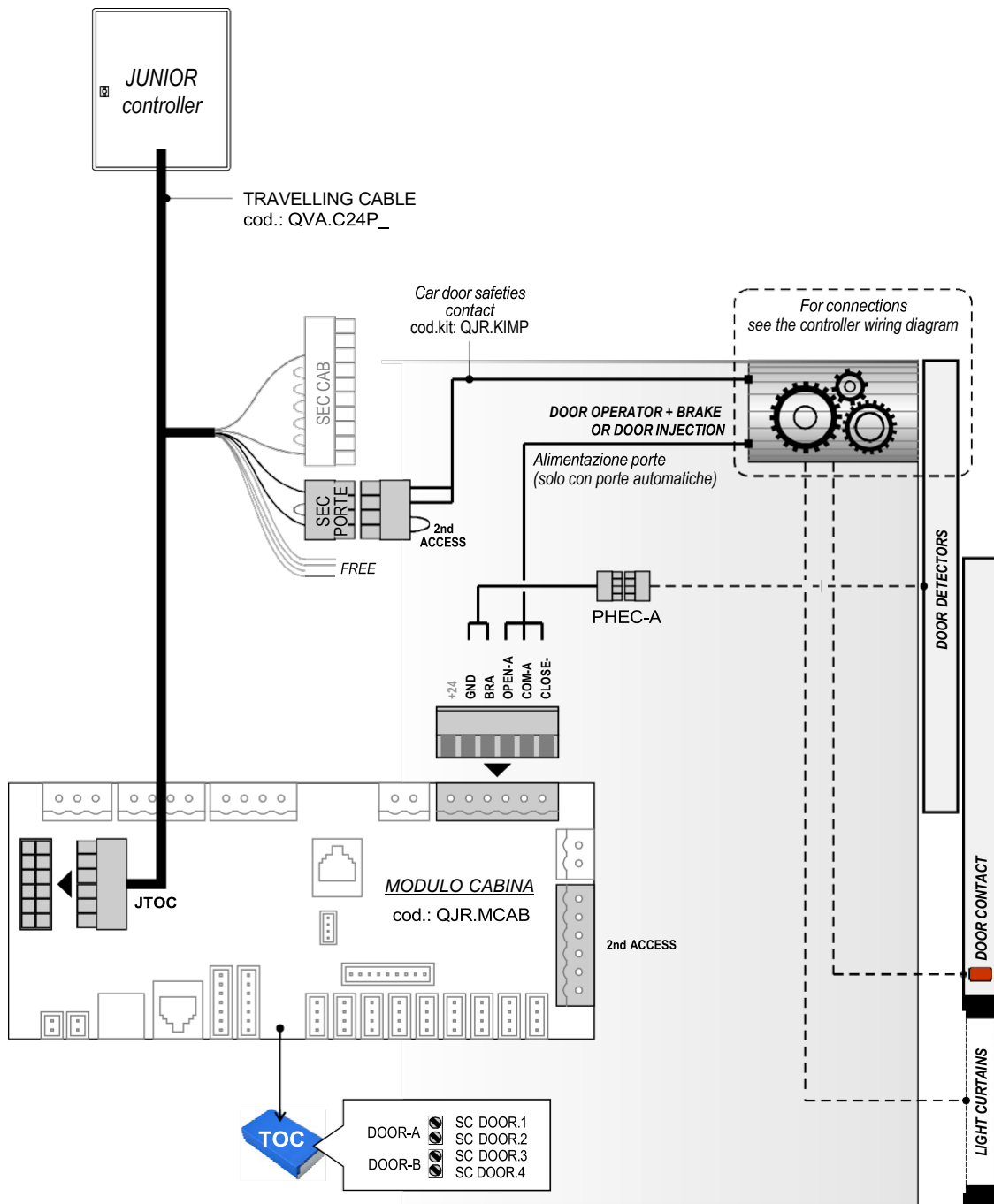
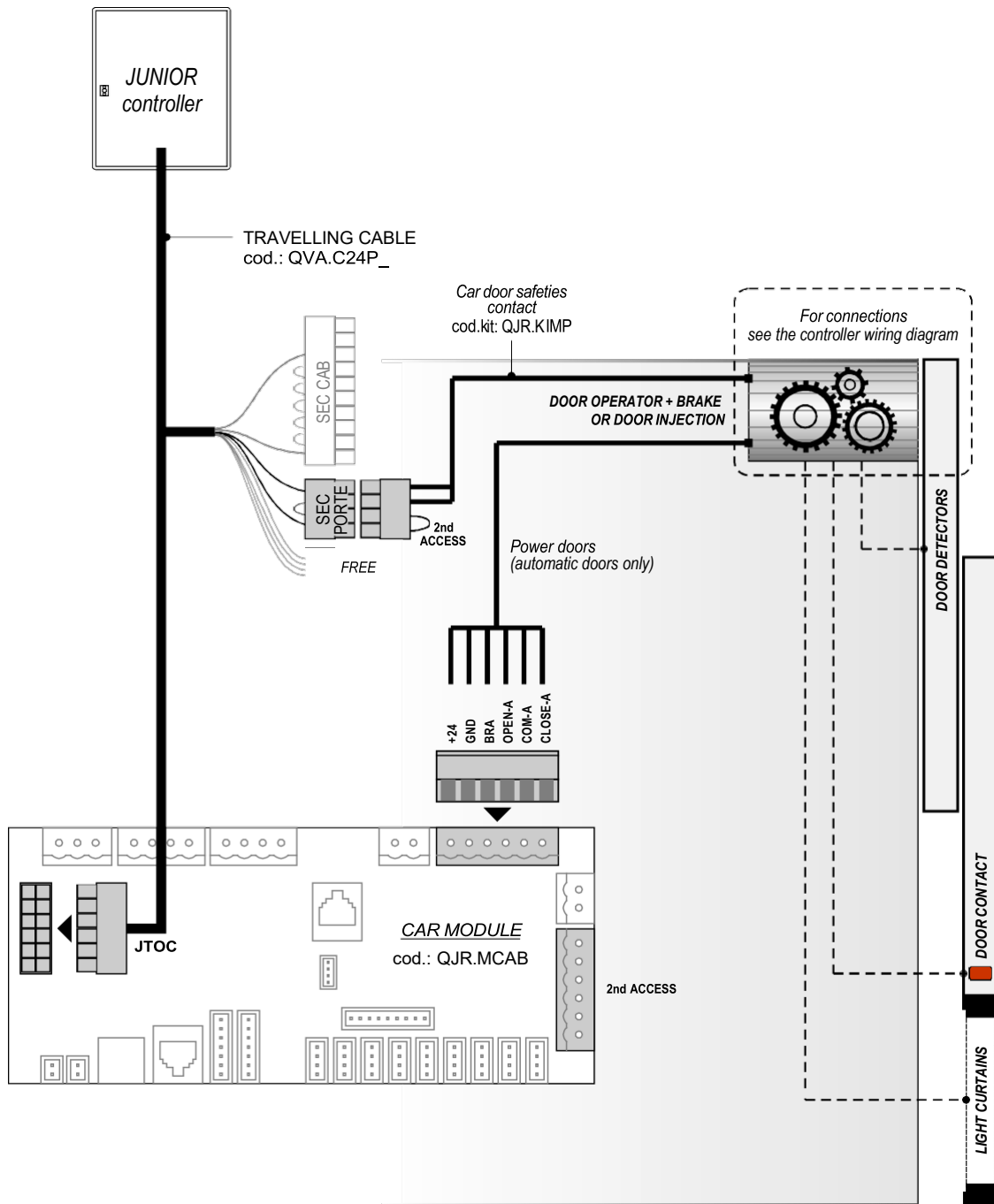


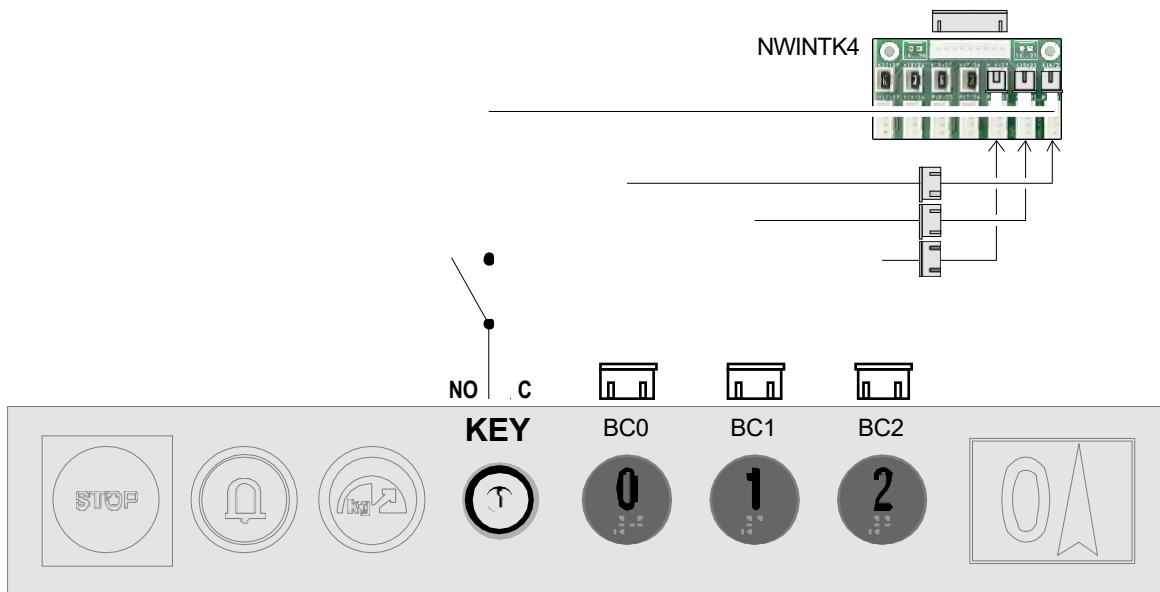
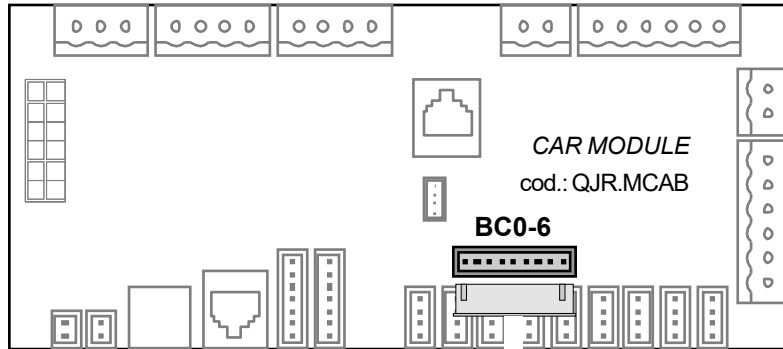
Fig. 2b (without TOC box)



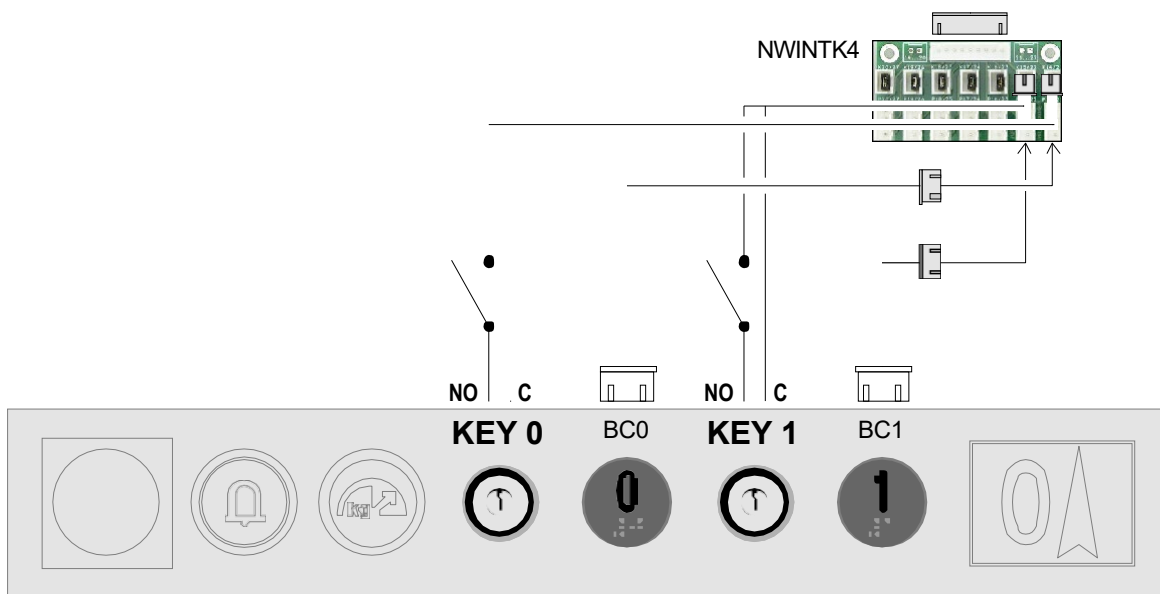
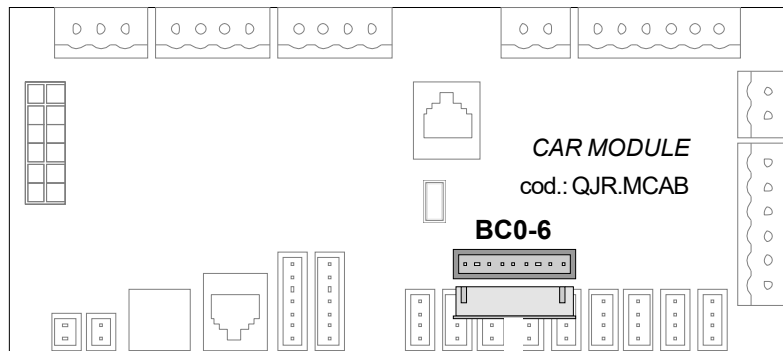


2.3.2.5. Connection of car key switch

Car enabling key switch

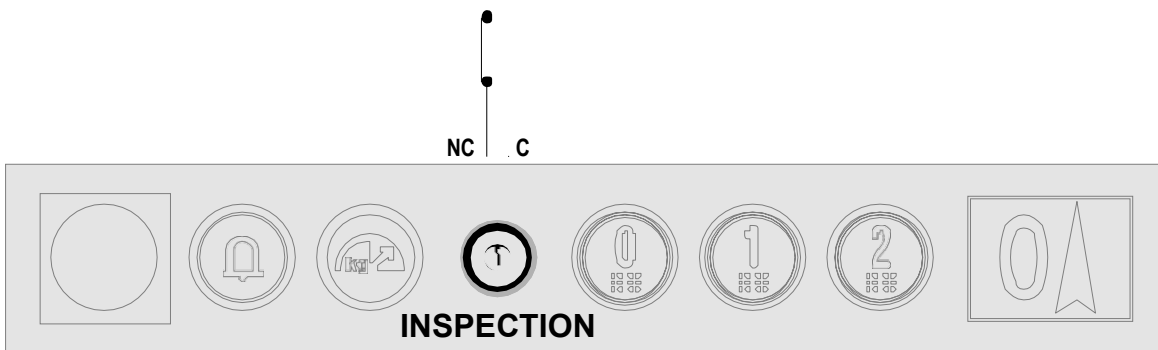
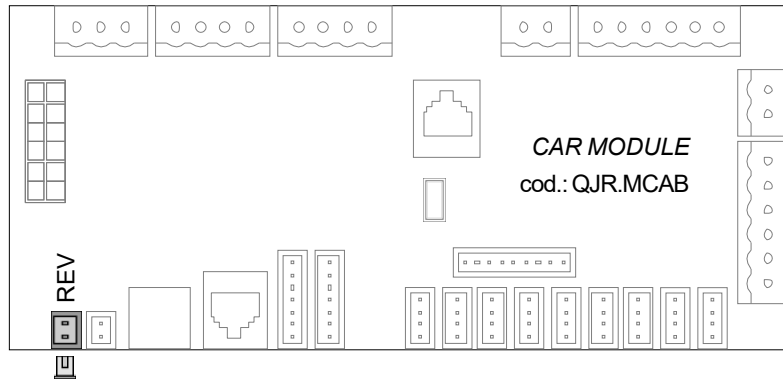


Call enabling key switch

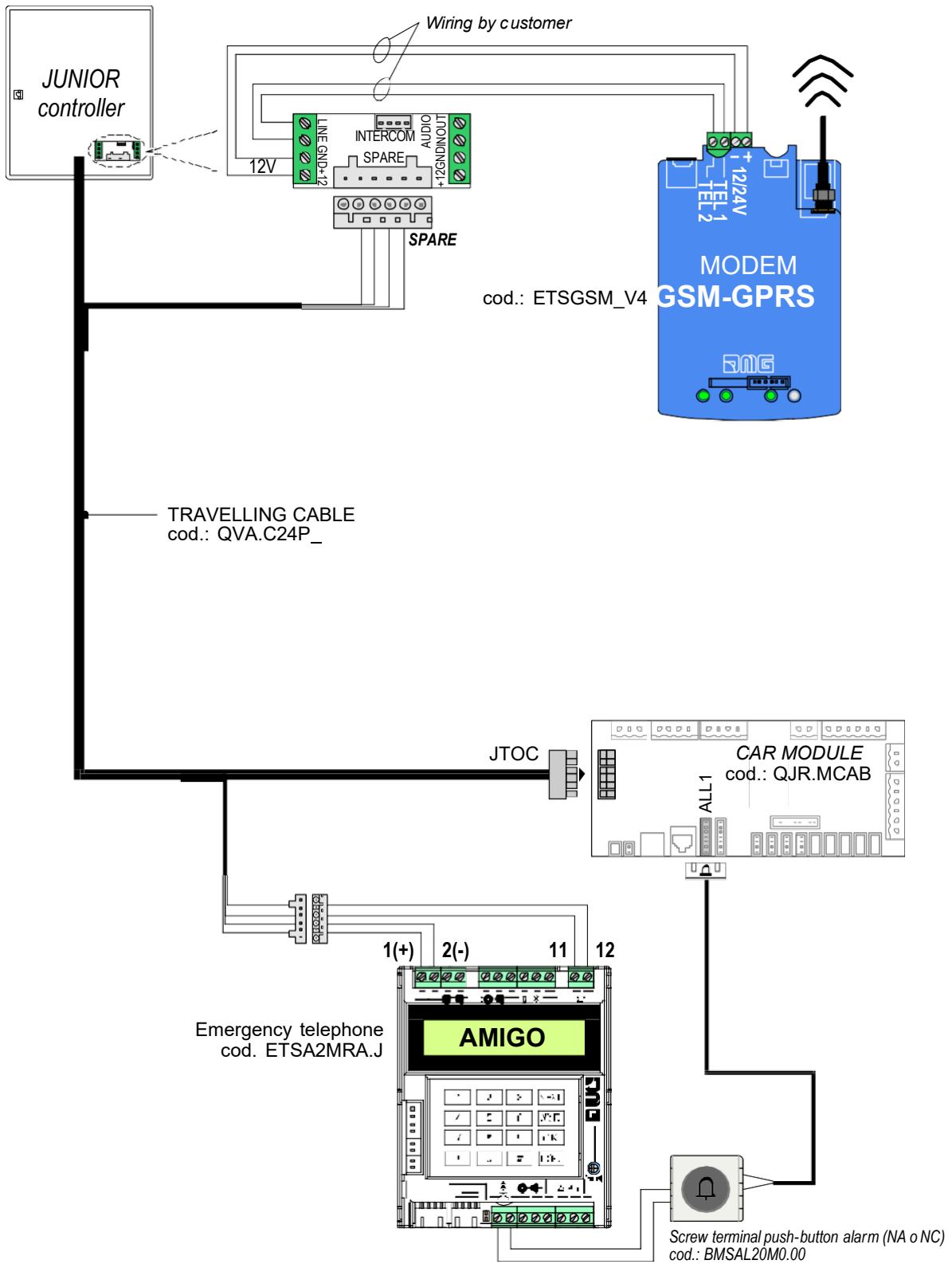




Car inspection key switch



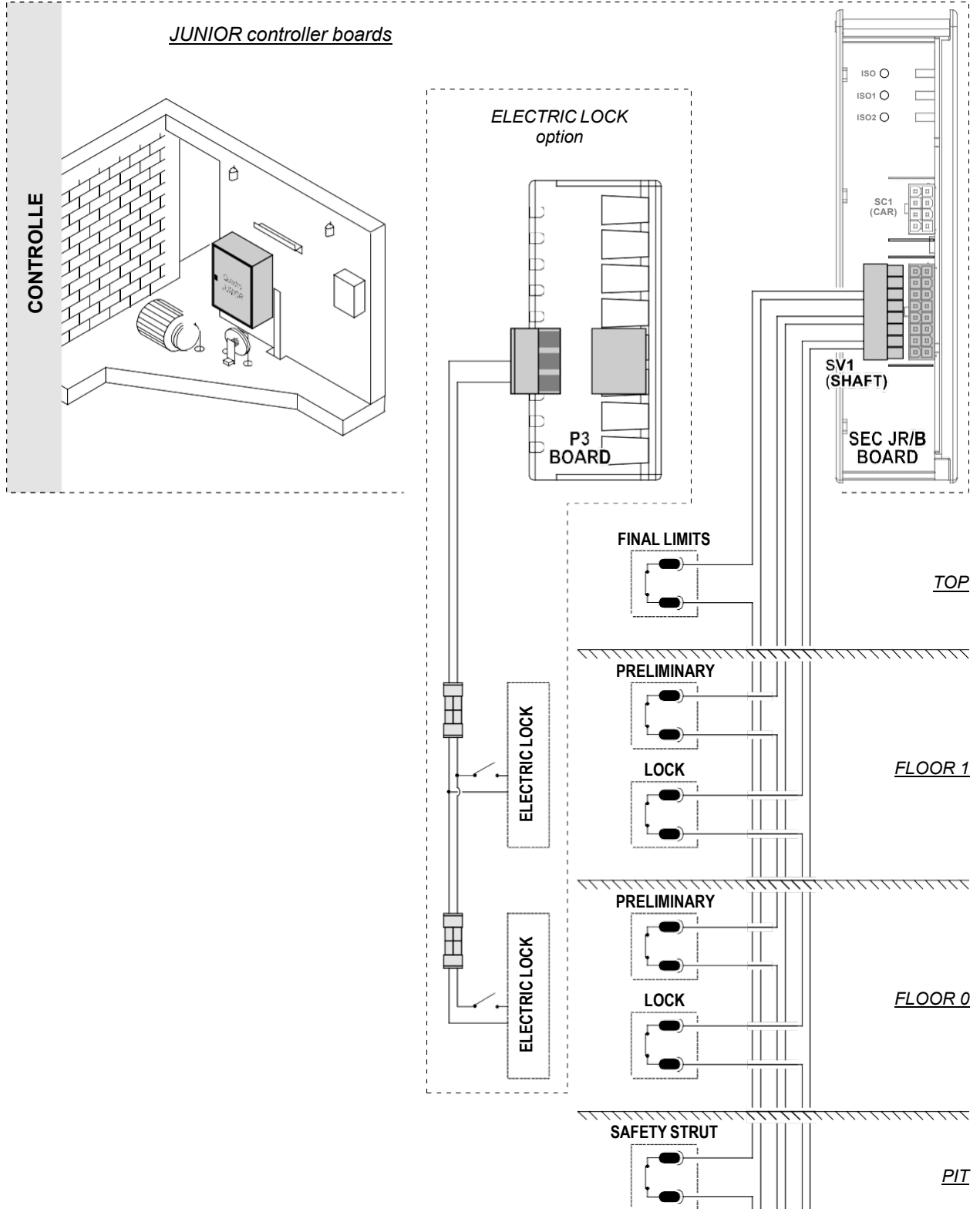
2.3.2.6. Connection of modem and emergency telephone



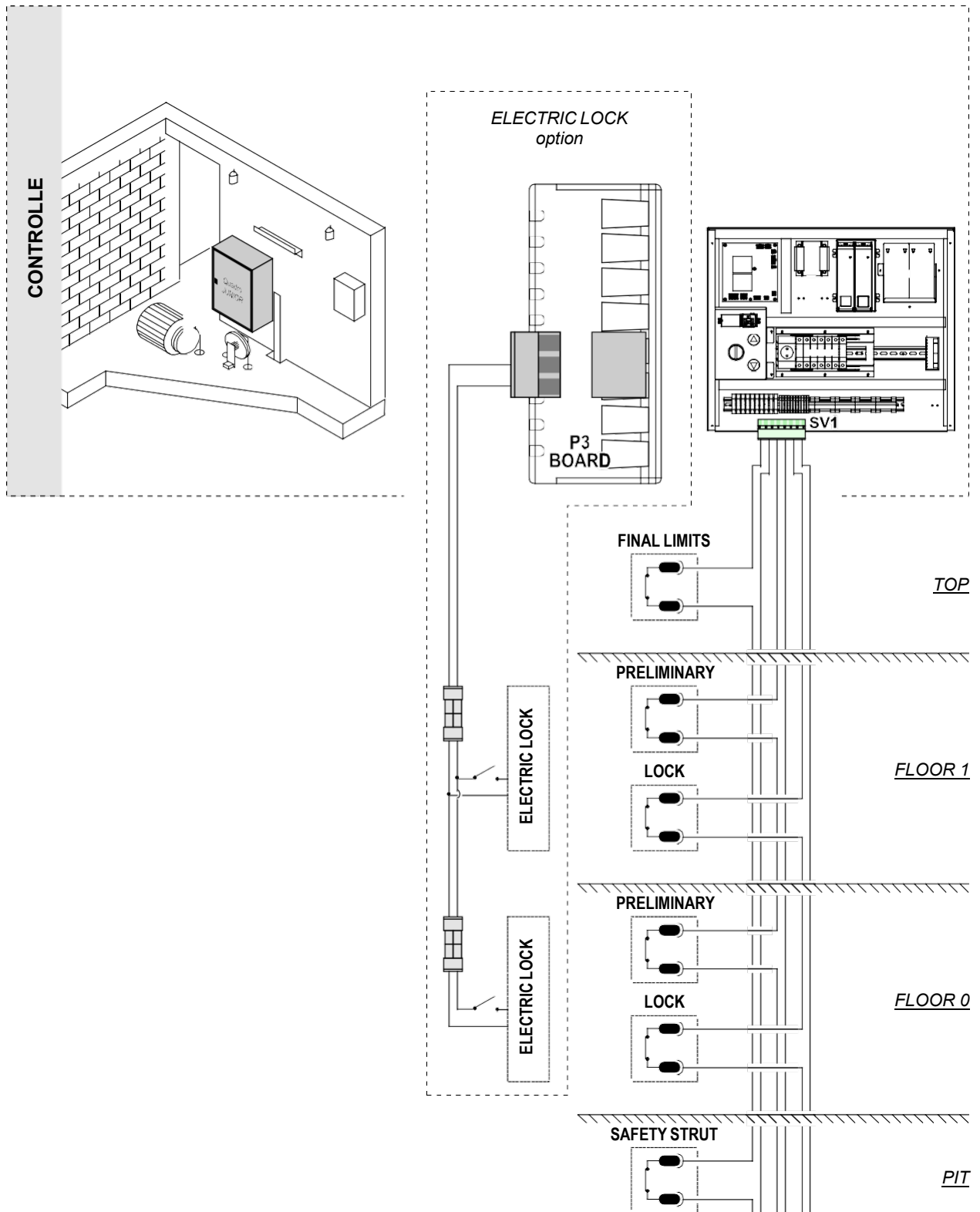
## 2.4 Connection of shaft pre-wired equipment

### 2.4.1 Safety Chain

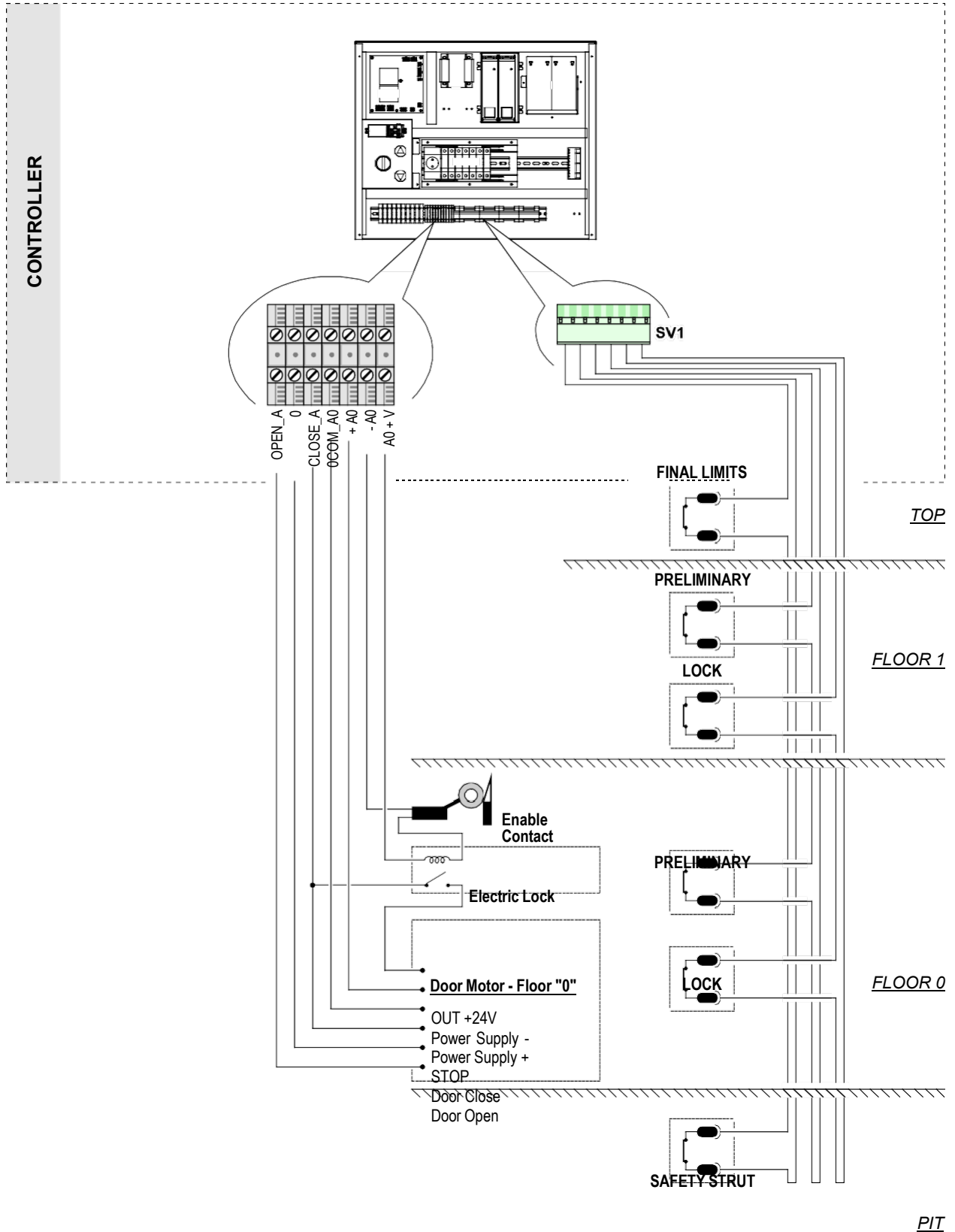
#### MANUAL Landing Doors (VVVF ELECTRIC JUNIOR)



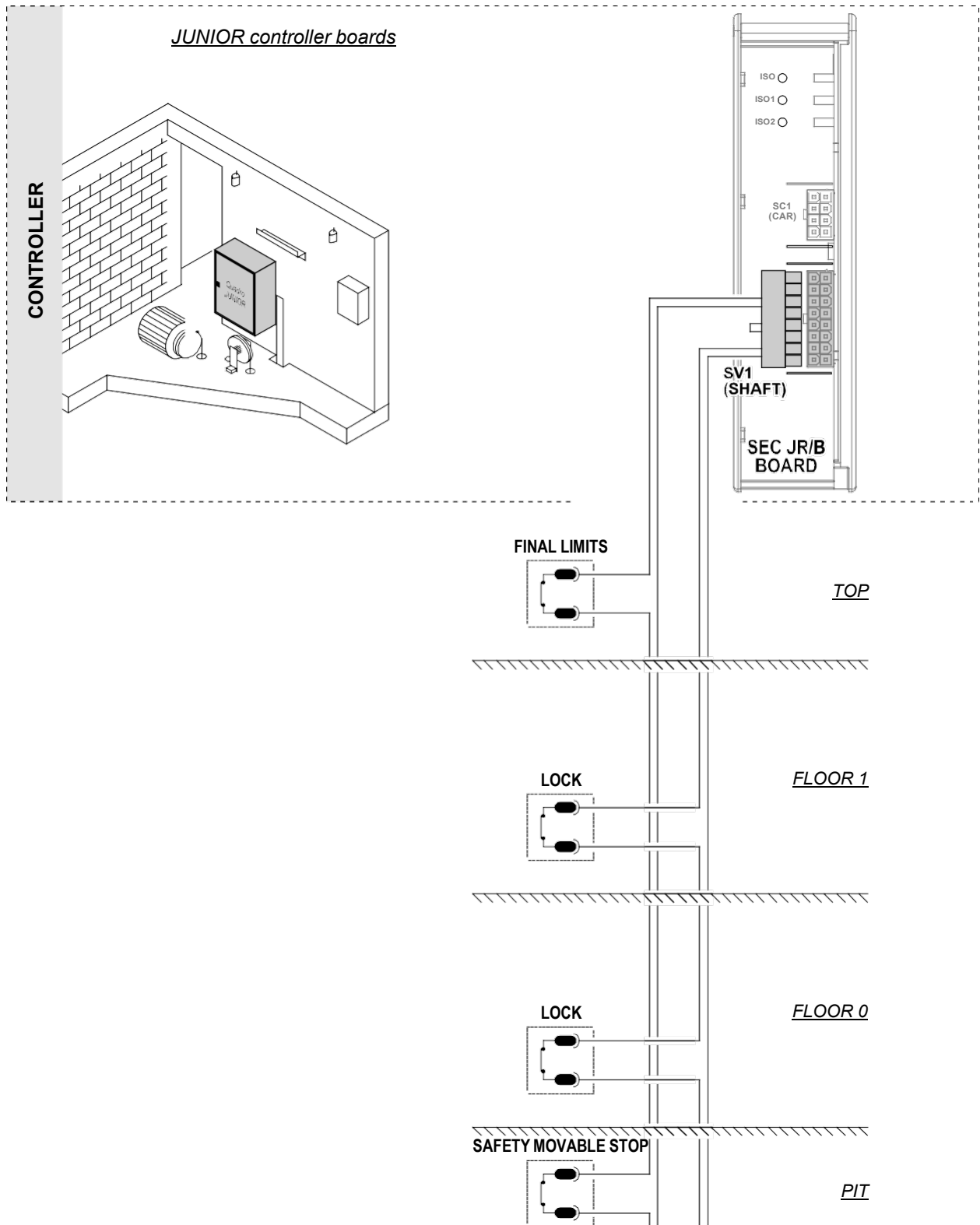
MANUAL Landing Doors (HYDRO JUNIOR)



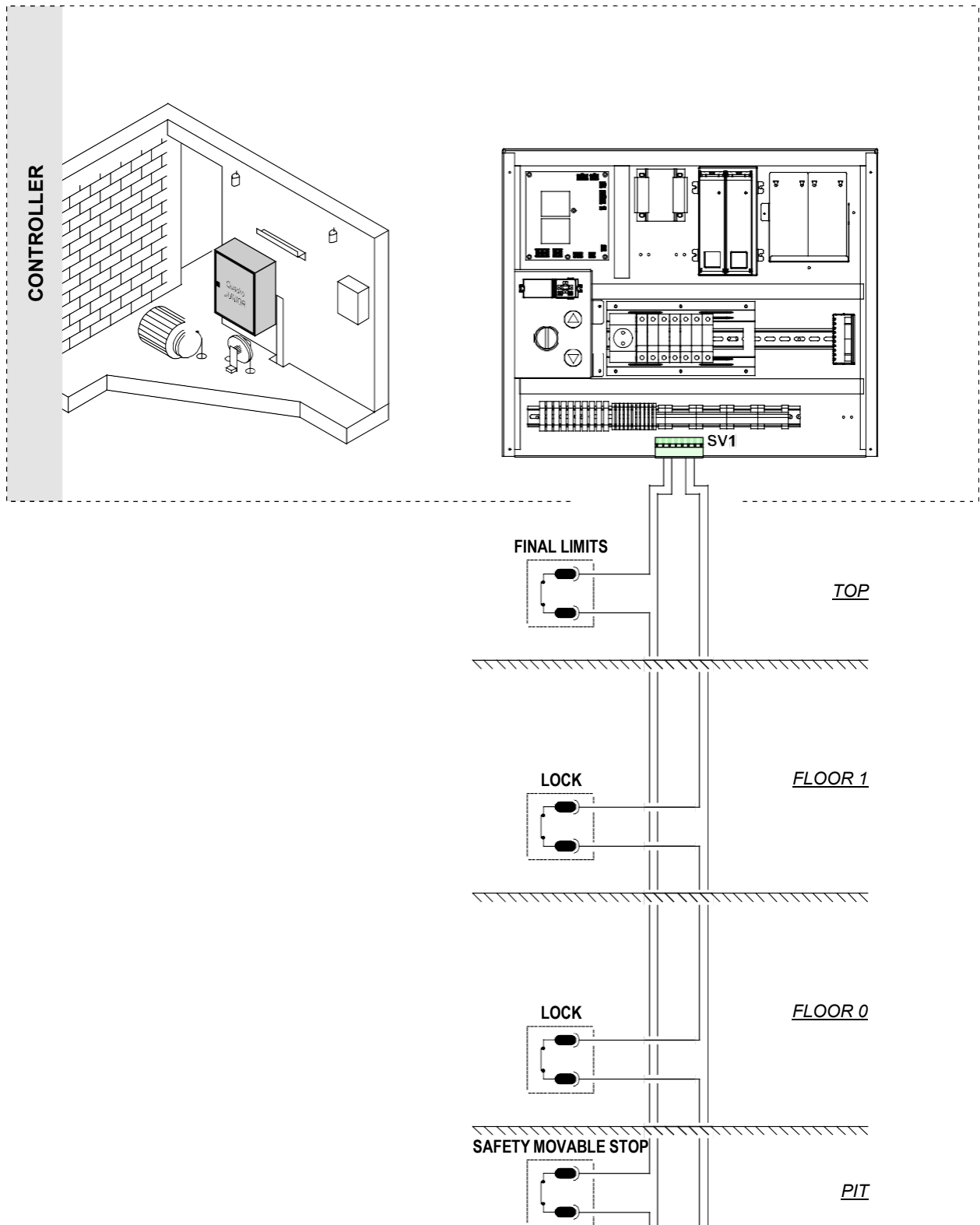
MOTORIZED Landing Doors (HYDRO JUNIOR)



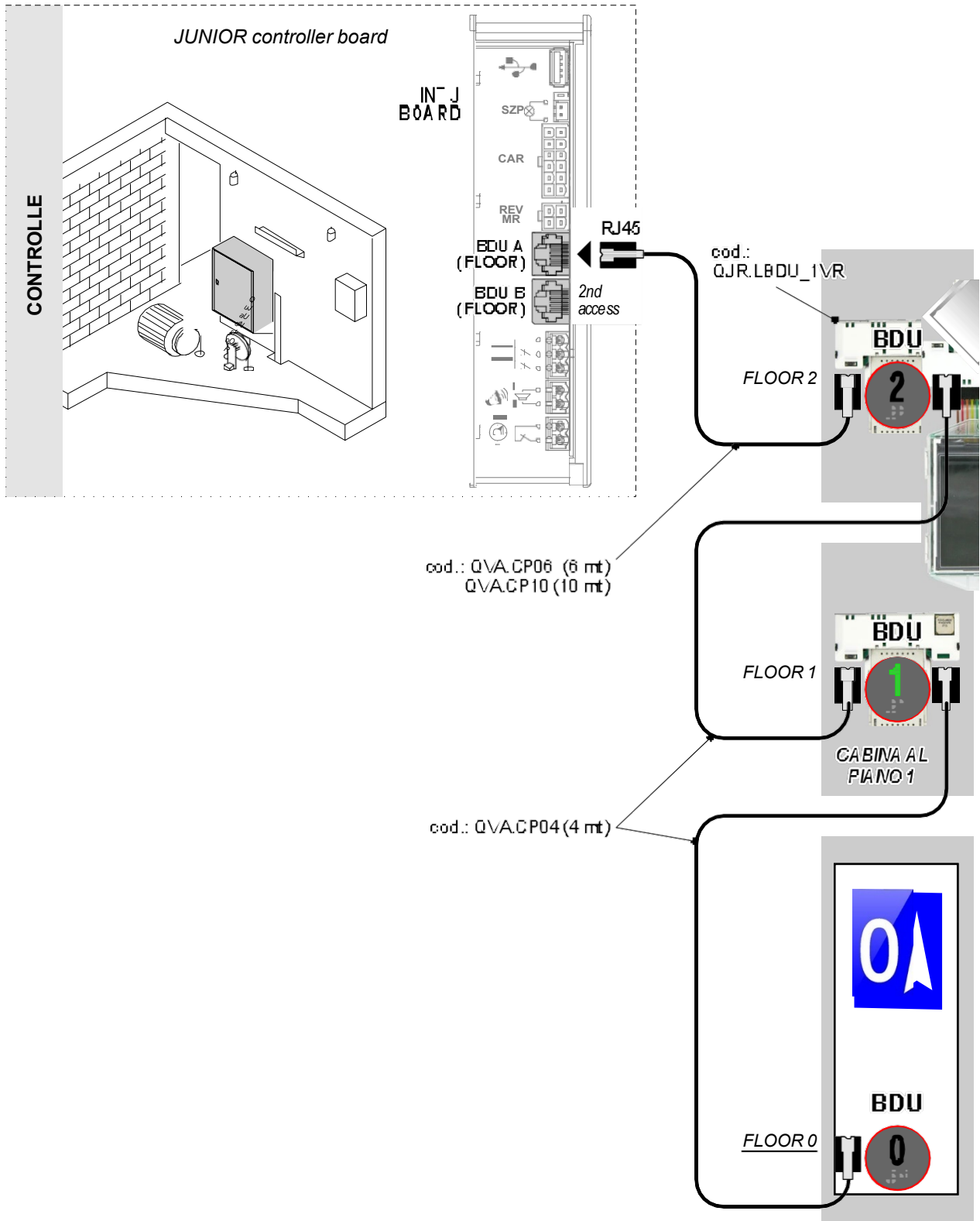
AUTOMATIC Landing Doors (VVVF ELECTRIC JUNIOR)



AUTOMATIC Landing Doors (HYDRO JUNIOR)



2.4.2 Landing Operating Panels





### **2.4.3 Connection of shaft access control system**

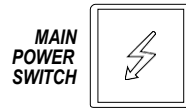
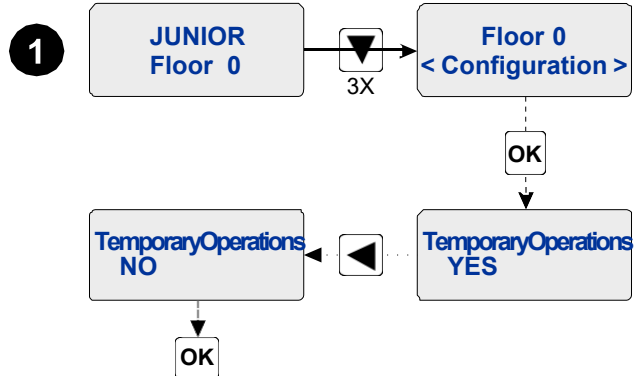
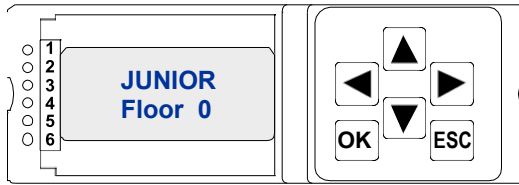
This system is an additional safety circuit of the Junior controller which is designed to be coupled with a mechanical safety gear to be installed in the pit by the lift installer (typically a pole with two positions: armed / disarmed).

When armed, this device prevents the cabin to move below a pre-set level, thereby creating a safety space in the pit for the lift technician.

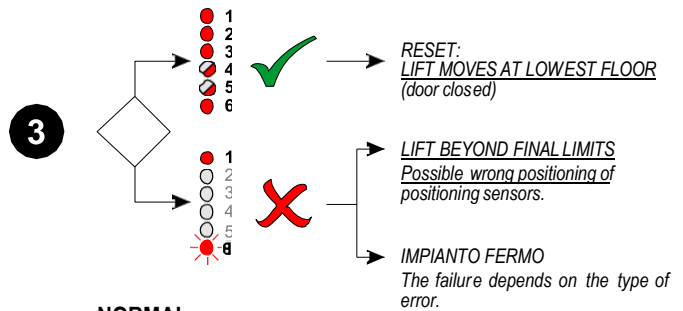
The control system is activated when the lowest landing door is opened. A safety signal is then activated (buzzer and/or visible indicator) and remains activated until the safety gear in the shaft is armed (door with monostable contact).

As additional safety precaution, after the safety gear is disarmed and the landing door is closed, the system remain locked (Error "FC") until manual reset (see "Faults" Menu § 3.3) is operated from the MINIPAD (as provided by standard EN81.41 - § 5.1.4.2.1 c).

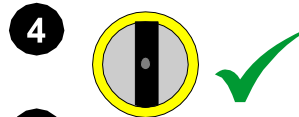
### 2.5 Normal Service Mode



**2** >>> OFF >>> ON  
(Switch off and power on to set the lift in normal service mode)

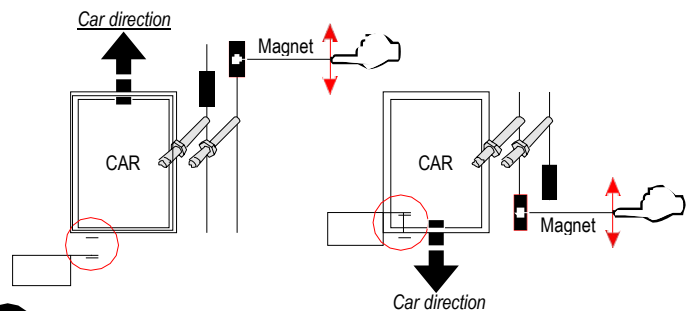


**NORMAL**



**5** Perform BDU programming procedure

**6** Set the stopping accuracy



**7** Perform final system test  
Check all lift functions

**BDU programming procedure**

**5.1** Verify that all BDU have been connected.

**5.2** Move the cabin to the floor associated to the BDU that has to be programmed.

**5.3** Press the floor call button (down arrow) for at least 5 seconds until an acoustic confirmation is heard. From now the BDU is programmed.

**5.4** Repeat steps for all floors.

**!** TO reset the BDU, toggle the system to "inspection mode" and keep the floor call button pushed until an acoustic confirmation is heard.

## 2.6 Basic Configuration of Parameters

JUNIOR controller is delivered with a default configuration of parameters, typically aligned to the type of installation where the controller is installed. It is recommended to check the correct setting of the following main parameters during the first installation:

Menu	Parameter	Description / Options	Default value
Menu "Configuration" (§ 0)	Type of Operation	Type of operation for the installation (Constant Pressure, SAPB, Mixed)	SAPB
	Number of Floors	Number of Floors (exits)	2
Menu "Doors" (§ 4.4)	Door A Type	Type of operation for Door A: Manual, Automatic, Semi-automatic	Automatic regulated
	Door B Type	Type of operation for Door B: Manual, Automatic, Semi-automatic	
	Door A / floor	Indicates, for a given floor, if lift access is on side A.  For automatic doors it also indicates the type of relevelling at floor (door open or closed)	<u>Manual Doors :</u> YES  <u>Automatic Doors :</u> Relevelling door closed;
	Door B / floor	As above, for side B	As above

Check the Menu Map in § 4 (Advanced Settings) to modify all other system parameters.

## 2.7 General Safety Measures

**NOTICE: Before final switch in normal operation mode, verify that all safety connections are correctly made!**

JUNIOR controller has been designed to respect all precautions as long as protection against noises and fault detection are concerned.

During installation, it is recommended to:

- Connect all metal elements to ground;
- Connect all unused conductors to ground (on the side of the controller cabinet);
- Connect the anti-noise filter delivered with the controller (inserted in the spare parts kit) in parallel to the brake coil (max 230VDC) and as close as possible to it;
- When the retiring ramp is present, connect the anti-noise diode delivered with the controller (spare parts kit) in parallel to the retiring ramp coil and as close as possible to it; make sure to connect the cathode (diode side marked with a white strip) to the power supply common "P+" and the anode to the negative "P-";

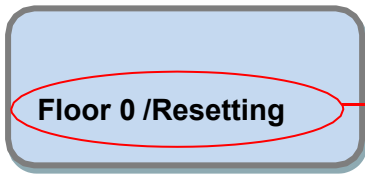
The size of fuses indicated in the wiring schematics **MUST BE RESPECTED**.

### 3. Diagnostics

By using the MINIPAD it is possible to check system status and verify the existence of faults.

#### 3.1 Showing system status

By default, MINIPAD's display shows either the car position or the current system status.

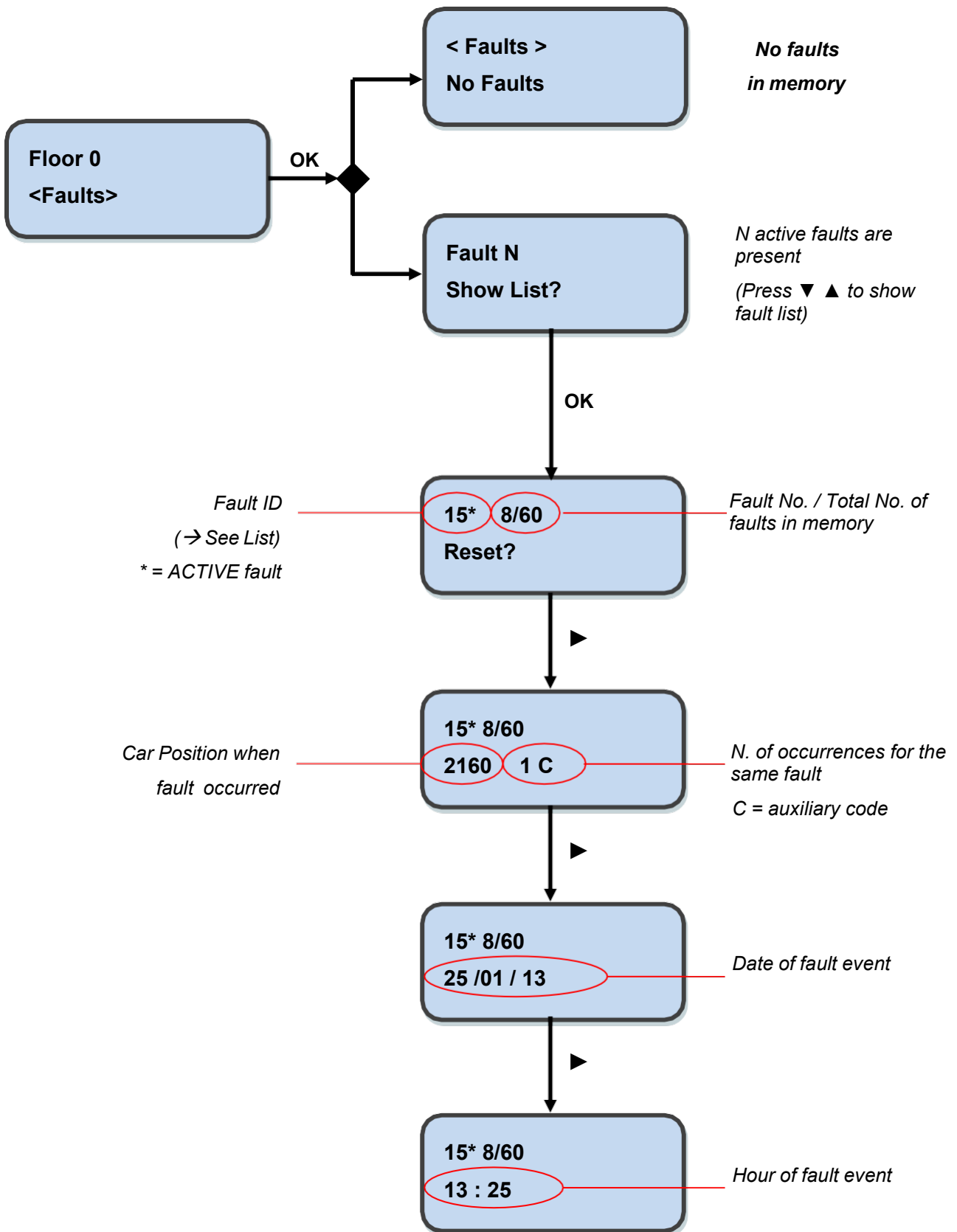


<i>Status</i>	<i>Description</i>
Resetting	Resetting procedure under way
Floor 0	Normal operation
Inspection	Inspection mode activated
Temporary Oper.	Temporary Operation mode activated
Emergency	Emergency operation underway
Fire-fighters	Fire Evacuation

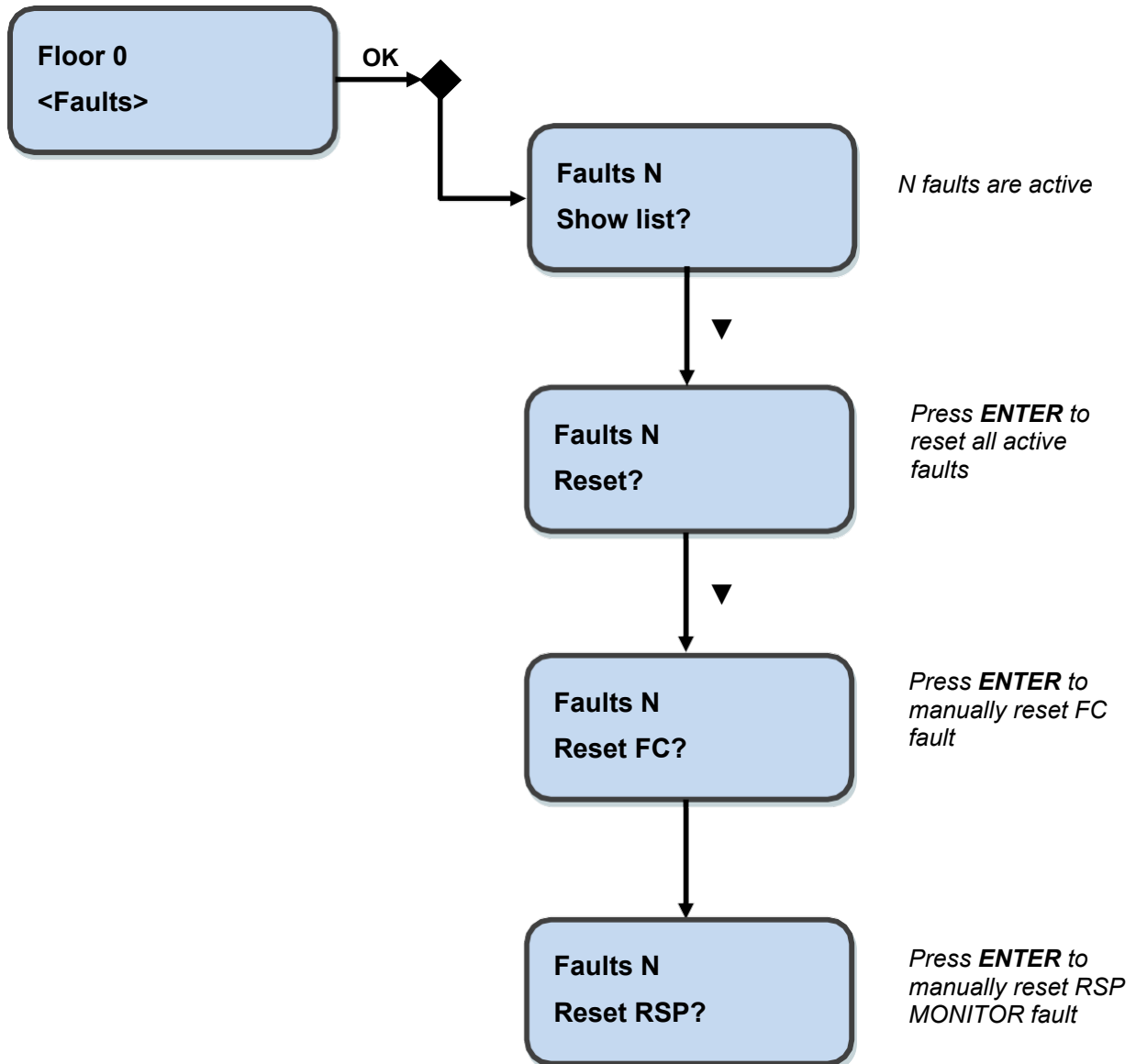
#### 3.2 Active Faults visualization

From "Status" Menu, by pressing ▼ it is possible to access the "Faults" Menu which shows the list of active faults of the system (last 60 fault codes are stored in memory). The description of each fault is included in the Troubleshooting Table (§ 3.4).

**NOTICE:** *In case of system shut down, faults are stored in memory only if the battery is connected.*






### 3.3 Fault Reset







**NOTICE: fault list can be deleted only if the lift is not moving!**

**3.4 Troubleshooting Table**

N.	Error	Tipo	Description	Remedy
1	Reset		Power supply failure: the controller is not powered	
2	Contactors blocked		One or more NC contacts associated to the power contactors and connected in series on the input CCO remain open after the car stop.	Check: 1- the series of power contactors and wirings in series on CCO circuit 2- wiring of CCO circuit
3	Low speed too Long		Car moving at low speed for too long	Check: 1- the parameter for the fault time (§3.5); and increase it if necessary 2- deceleration distance at floor (FAI/FAS magnets)
4	Overload		Overload input (SUR) activated (NO contact)	Check SUR input (if blocked) and its wiring
5	Positioning fault		This error shows a difference between calculated and real (detected) position at the activation of the AGB/AGH limit contacts	Check: 1- correct position of magnets 2- correct functioning of magnetic sensors (check 24V) 3- distance between deceleration limit switch and magnet
6	Direction fault		The controller detects the wrong direction of travel	Check: 1- correct direction of the motor drive (UP command vs. direction of travel of the cabin) 2- correct installation and connection of FAI / FAS sensors 3- AGH / AGB inputs
9	Door lock fault		Safety chain open at point SIC5 when a call is registered <u>With automatic door:</u> door reopens and then closes (3 times, after which all calls are cancelled). <u>Other door types:</u> after a few seconds all calls are cancelled	On SEC J board, check door lock contacts and their connection; check also the presence of objects jamming the doors at the indicated floor
12	Safety 3 open during travel		Safety chain open before Input SIC3 while car travelling. Car stops and all car and landing calls are cancelled. Led SIC 3 on the MINIPAD is off	On SEC J board, check all door preliminary contacts
13	Motor temperature Sensor		Input THM of motor temperature is activated (NC contact)	On INT J board, check TH1 and TH2 inputs (NC contacts), connections with thermal sensor and its correct functioning
14	Parameters memory		Fault in the parameters memory of the EEPROM	Reset and enter again all parameters
15	Safety 2 – Final limit switch		When the top/bottom final limit switch is reached (or the safety gear in the pit is armed), input SIC2 is active (NC contact). The fault remains active also after releasing the input and inhibits all calls until the “FC” fault is manually reset in the “Faults” Menu.	1- Move the cabin out of the final limit switch zone 2 - Reset FC parameter (§3.3) 3- Check wiring of top/bottom final limit switches (NC contact)



N.	Error	Tipo	Description	Remedy
17	Safety 4 open during travel		Safety chain open before input SIC4 while car travelling. All calls are cancelled. Led SIC 4 on the MINIPAD is off.	On SEC J board, check all door lock contacts
18	Safety 5 open during travel		Same as above, for input SIC 5	On SEC J board, check all car door contacts
19	Low tension during Movement		Motherboard power below 17V (this fault disappears when the 24V is restored)	Check power input, voltage on transformer, presence of 24V and circuit consumption
20	Travel interrupted		Contactors are activated during Upward/downward car travel while Corresponding commands (R-UP or R-DOWN) are active. Possible micro-interruption of safety chain during travel	Check: 1- door preliminary contacts and door lock contacts at the indicated floor 2- car door contacts 3- power input voltage of the safety chain
21	Input CCO blocked		Contactor control circuit (CCO input, which is normally closed when the car is stopped) remains closed during travel.	Check: 1- wiring and functioning of auxiliary contacts (NC) of power contactors 2- wiring and functioning of other NC contacts wired in series on the CCO circuit 3- CCO input on the Motherboard
22	Low tension at Stop		Motherboard power below 17V (this fault disappears when the 24V is restored)	Check power input, voltage on transformer, presence of 24V and circuit consumption
23	AGB blocked		The expected operation of AGB (NO) contact is not checked because of contact opening failure at the lowest floor (cod 200, installation locked) or because of contact closing failure at other floors (cod 100, downward calls erased).	Check the condition of AGB contact (magnetic sensor) and its wiring
24	AGH blocked		The expected operation of AGH (NO) contact is not checked because of contact opening failure at the highest floor (cod 200, installation locked) or because of contact closing failure at other floors (cod 100, upward calls erased).	As above, for AGH contact
25	AGH and AGB Simultaneously		Simultaneous closing of AGB / AGH inputs. Lift is blocked.	Check the condition of AGH and AGB contacts and their wiring When one of the two contacts is open, the lift starts the reset procedure
26	Running time Up		No change in the beam status for motion sensors (or floor) for more than planned during car upward travel.	Check contactors, brake, motor power supply, FAI/FAS sensors.
27	Running time Down		See above, for downward travel	As above

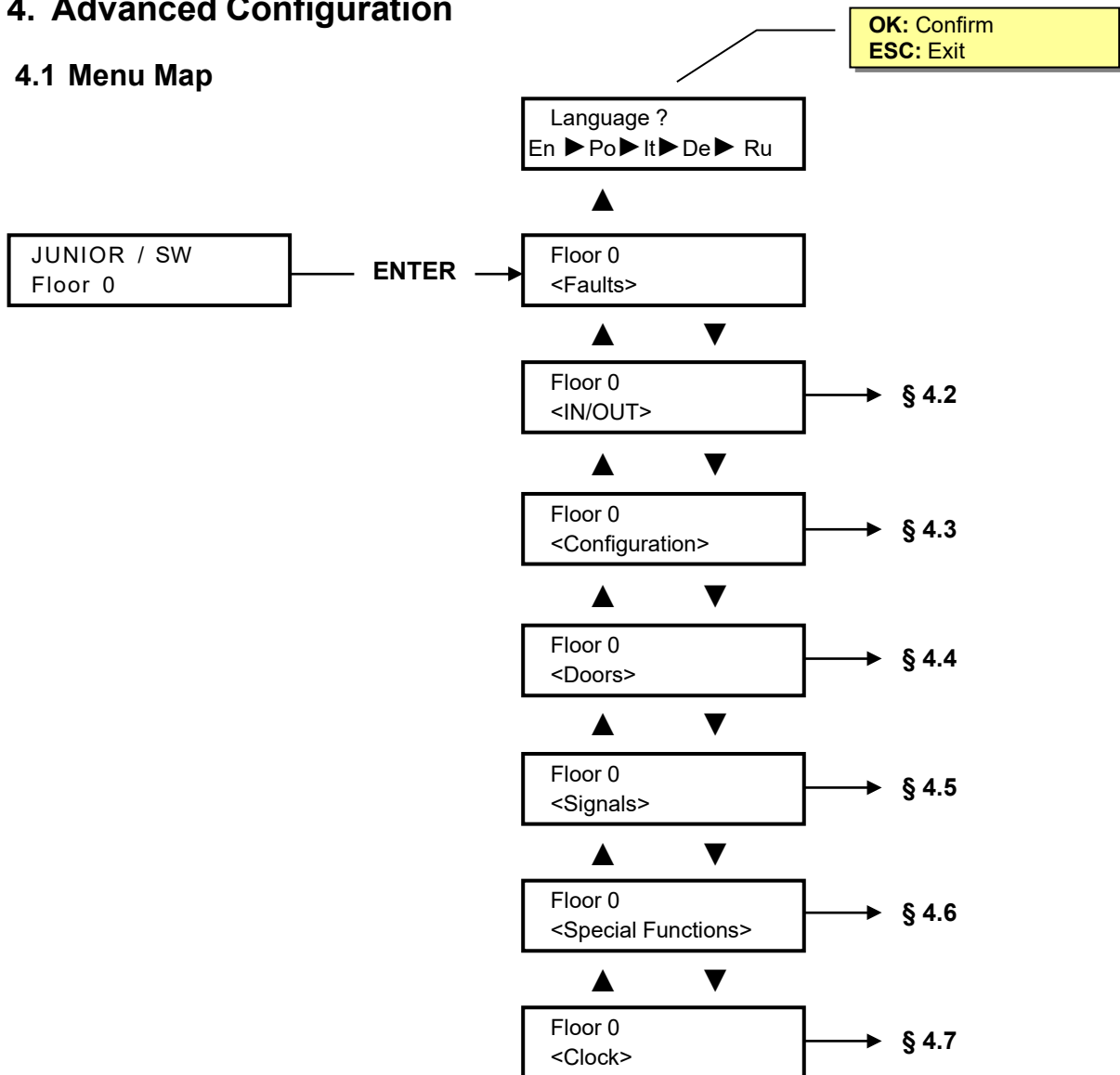
N.	Error	Tipo	Description	Remedy
31	FAI-FAS error		Simultaneous variation of FAI/FAS positioning sensors. POS [n] indicates that the error occurred at floor [n]. POS 100 indicates a wrong sequence of beams	Check power supply to sensors; Check sensors Check magnet positions
33	Stopping accuracy		When the lift stops at floor, the two ISO1 and ISO2 LEDs on SEC J board are on. If within 2 seconds from the stop one of the beams is interrupted, this fault is activated.	Check position of the magnets
37	Low battery		Low charge on 12V battery	Test battery charge or change battery
38	Safety 1 open		Safety chain open. All calls are canceled. LED SIC 1 on MINIPAD is off.	On SEC J board, check all relevant contacts (STOP, magneto-thermic switch)
40	RSP fault (See Appendix B)		RSP monitoring fault (shaft access). When enabled (See § 4.6), this fault indicates a manual unlock of one of the landing doors	1 - Terminate all maintenance operations in the shaft; 2 - Put selector in "Normal Operation mode"; 3 - Exit from the shaft, close the door and reset the fault RSP (§3.3).
42	TOC Communication		Communication fault between controller and cabin	Check wiring between controller and car module QJR.MCAB
43	Inspection		The system is in Inspection mode (NORM/ISP switch set to Inspection)	To exit the inspection mode move the NORM/ISP switch to Normal
44	Re-levelling not Completed		Hydraulic lifts: the re-levelling procedure was not completed within 10 seconds. All subsequent re-levelling requests at the same floor are inhibited	Check: 1- FAI / FAS sensors (NO contacts); 2- magnet positions in the door zone
45	Fault ZP		Door zone contact stays open when the sensor is in door zone position	Check FAI / FAS sensors (NO contacts)
47	Faults memory		Errors in the faults memory	Reset all faults
48	BDU link Unavailable		In case of serial communication with floors, indicates the loss of link between the controller and all BDU modules at floors	Check: 1- BDU input on INT J board; 2- the connection between the controller and the nearest BDU;
49	BDU fault		indicates the loss of link between the controller and one or more BDU at floors	Check BDU functions and its connections; change defective BDUs; repeat the addressing procedure
58	FAI Sensor		No coherence on double contacts sensor FAI (FAI input is different from ISO 1 input)	-) Wiring broken (ISO1): Check wiring between car and controller -) FAI Faulty Sensor: Change FAI sensor
59	FAS Sensor		No coherence on double contacts sensor FAS (FAS input is different from ISO 2 input)	-) Wiring broken (ISO2): Check wiring between car and controller -) FAS Faulty Sensor: Change FAS sensor



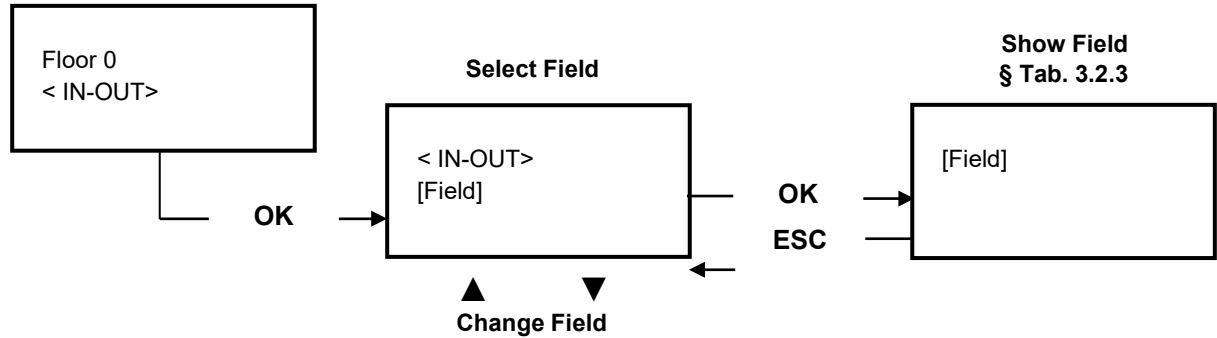
Indicates a blocking error which requires the intervention of the lift technician: switch off main power and then back on to put the lift back in service

## 4. Advanced Configuration

### 4.1 Menu Map



**4.2 Menu “I-O Status”**



List of Parameters

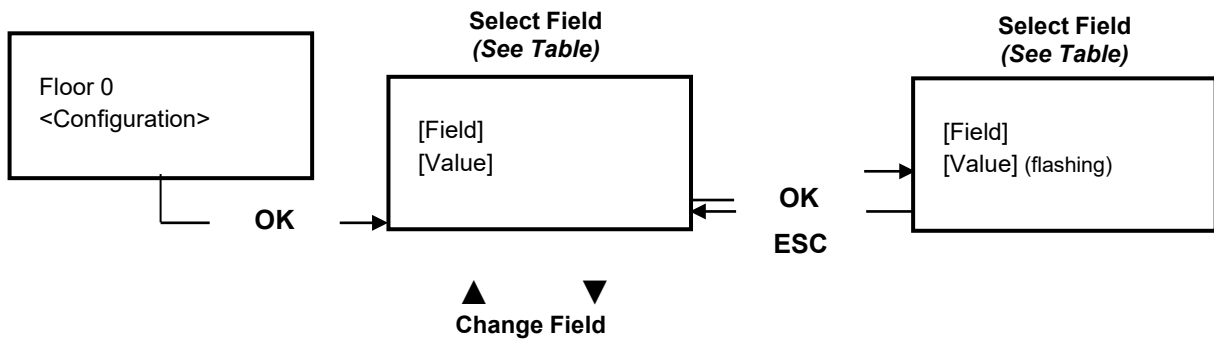
Parameter	Description	Navigation	Values
Car call	Simulation of a car call	▲▼ Select OK Confirm ESC Exit	
Inputs	<b>System Inputs</b> ☐ = Open contact ■ = Closed contact	▲▼ Navigation ESC Exit	AGB; AGH; ALARM; CCISO1; CCISO2; CCO; EME-IN; EME-FLT; FAI; FAS; KEY; OPEN-A; OPEN-B; OVL; PCA; RED; REM; REV; REV-TOC; SIC-1; SIC-2; SIC-3; SIC-4; SIC-5; SZP; THM-1; THM-2; IN-A; IN-B
Outputs	<b>System Outputs</b> ☐ = Open contact ■ = Closed contact	▲▼ Navigation ESC Exit	A-CLOSE; A-OPEN; B-CLOSE; B-OPEN; CB_OFF; EME_O; LTMP; R-DOWN; R-HIGH; R-ISO; R-UP; EME_O; LOCK-A; LOCK-B; R_LOW; R_BRAKE; R_ENAB
Pushbuttons	Indicates the floor designation of active calls (car and landing), for each access	◀▶ Change value ESC Exit	Car A; Car B; Floor A; Floor B;
Voltage tension	Measure of voltage tensions on Motherboard	◀▶ Change value OK Select ESC Exit	3,3 V = logic 3,3 Volt 5,0 V = logic 5 volt +24 VDC = Power supply 24VDC +24 VCB = 24 VB with battery charge on +24VB = 24 VB with battery charge off 20 VDC = Transformer input
Part. = ...	Travel counter	OK Reset and exit ESC Exit	
BDU Line	Serial bus diagnostics (to check uqality of signal in the BDU communication)	◀▶ Change value OK Select / Reset ESC Exit	Measures quality of signal in BDU serial bus Faults: transmission/reception FER : fault / sent packets ratio Date: from last reset  Note: measuring start on every switch on of the controller

## JUNIOR IN-OUT Parameter description

Signal	Description
(IN) AGB - AGH	Top (AGB) Bottom (AGH) deceleration switch
(IN) ALARM	Car alarm
(IN) CCISO1-2	ISO relays control / safety circuit
(IN) CCO	Contactors control
(IN) EME-IN	Power outage (Emergency)
(IN) EME-FLT	Emergency signal (Electric lift only)
(IN) FAI-FAS	Counting beams
(IN) KEY	Fire Evacuation Key
(IN) OPEN-A/B	Opne door Side A/B
(IN) OVL	Overload control
(IN) PCA	Presence in the car (only for mixed operation type)
(IN) RED-REM-REV	Inspection down - Inspection up - Inspection mode
(IN) REV-TOC	Car Inspection (bypass of car safeties)
(IN) SIC1...SIC5	Safety chain control points
(IN) SZP	Door zone signal

Signal	Description
(IN) THM-1/2	Motor / oil temperature control
(IN) IN-A/B	Feedback from electrolocks board
(OUT) A/B-CLOSE	Door A/B CLOSE command
(OUT) A/B-OPEN	Door A/B OPEN command
(OUT) CB_OFF	Battery charger bypass (for test)
(OUT) LTMP	Timed car light command
(OUT) R_DOWN	DOWN Command
(OUT) R_HIGH	High speed Command
(OUT) R_ISO	Re-leveling Command
(OUT) R_UP	UP Command
(OUT) EME_O	Emergency Command
(OUT) LOCK-A/B	Electrolocks Command
(OUT) R_LOW	Low speed Command
(OUT) R_BRAKE	Brake activation Command
(OUT) R_ENAB	VVVF enabling Command

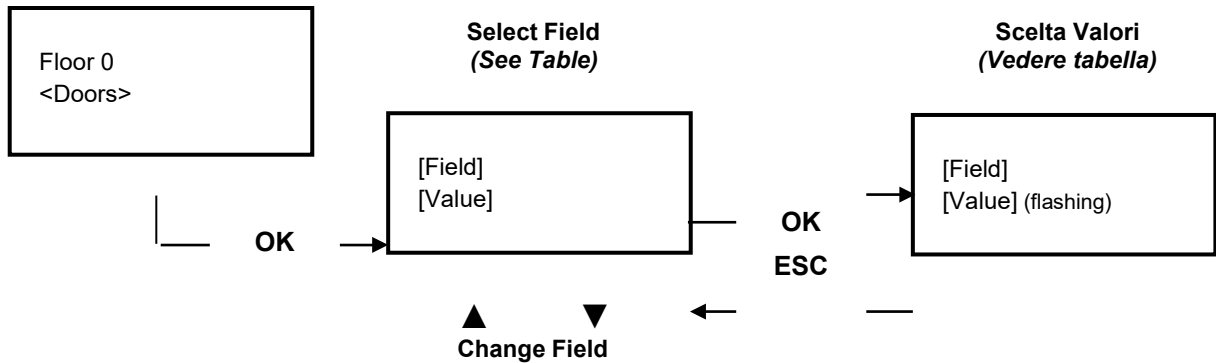
### 4.3 Menu “Configuration”



List of Parameters

Parameter	Description	Navigation		Values	Default value
Temporary operation	Temporary operation mode for the installation	◀▶	Choice	No; Si	No
Type of operation	Type of operation for the installation	◀▶	Choice	SAPB; Constant pressure; Mixed	Constant pressure
Lift type	Traction type (VVVF Electric or Hydraulic)	◀▶	Choice	Hydraulic; VVVF Electric	Hydraulic
No. of floors	Number of floors of the installation	▲ ▼	Increase Decrease	2 <-> 7	2
Re-levelling	<b>Without</b> : No Re-levelling <b>Type 1</b> : (open or close door). Re-levelling is triggered when the car leaves its position "exactly at floor" (one of the two beams is interrupted). Re-levelling terminates when both beams are engaged. <b>Type 2</b> : same as type 1 moreover avoid check of constant pressure button when the cabine is in the door zone of destination floor. <b>Type 3</b> : do not use <b>Type 4</b> : No releveling but avoid check of constant pressure button when the cabine is in the door zone of destination floor.	◀▶	Choice	Without; Type 1 Type 2 Type 3 Type 4	Type 1
Inspection speed	Change the speed during inspection	◀▶	Choice	Low speed; High speed	Low speed
Low speed fault time	Time before activation of the Low Speed fault (low speed too long)	▲ ▼	Increase Decrease	7 s <-> 40 s	20 s
Running time	Time before activation of running time fault	▲ ▼	Increase Decrease	20 s <-> 120 s	60 s

### 4.4 “Door” Menu



List of Parameters

Parametro	Description	Navigation	Values	Default value
Door Bypass	Enabling of Car/Landing door lock bypass circuit during travel <i>NOTE: available with SW Release 2.1.4 onward</i>	◀▶ Choice	No; Yes	No
Locks on	Activation delay for electrolocks command	▲ Increase ▼ Decrease	0,0 s ↔ 10,0 s	0,0 s
Locks off	Deactivation delay for electrolocks command	▲ Increase ▼ Decrease	0,0 s ↔ 10,0 s	0,0 s
Lock fault	Delay for activation of Lock delay	▲ Increase ▼ Decrease	2 s ↔ 60 s	15 s
Door open delay	Automatic door opening delay	▲ Increase ▼ Decrease	0,1 s ↔ 9,9 s	0,5 s
Car at floor with doors open	Delay for car at floor with doors open	▲ Increase ▼ Decrease	1 s ↔ 30 s	7 s
Door No.	Number of access and type of door opening	◀▶ Choice	-1 door -2 doors simult. -2 doors sel. -2 doors sel+through	1 access
Type Door A	Selection of door type for entrance A: 1) <i>Manual / Not present</i> : manual doors at floors, car doors manual or not present; 2) <i>Motor swing door</i> : motorized doors on the floor; 3) <i>Car automatic</i> : manual doors at floors, car doors automatic; 4) <i>Combined auto</i> : automatic doors in the car and at Floors	◀▶ Choice	Manual / not present; Motor swing doors; Car automatic; Combined Auto	Combined Auto
Door A	Door A command option for special door Operator: 0 = default command 1 = Short close command (1 sec) 2 = DORMA PORTEO	◀▶ Choice	Type: 0 1 2	0
Select Door A at floor	Configuration of door A for each floor: set access to each floor and open or close door parking at floor (for automatic doors)	◀▶ Choice ▲▼ Change floor	Yes; No; Pkg. Door close; Pkg. Door open	Pkg. Door close;
Door A Open/Close time	Door A without limit switch: door opening/closing time	▲ Increase ▼ Decrease	1 s ↔ 60 s	10 s
Door A start delay	Door A manual: time before start	▲ Increase ▼ Decrease	0,1 s ↔ 9,9 s	2,0 s
Door A powered	Door A powered during the run. Not considered for manual or independent doors	◀▶ Choice	No; Yes	No
Type Door B	Selection of door type for door B (see Type Door A)	◀▶ Choice		



## JUNIOR Installation Manual

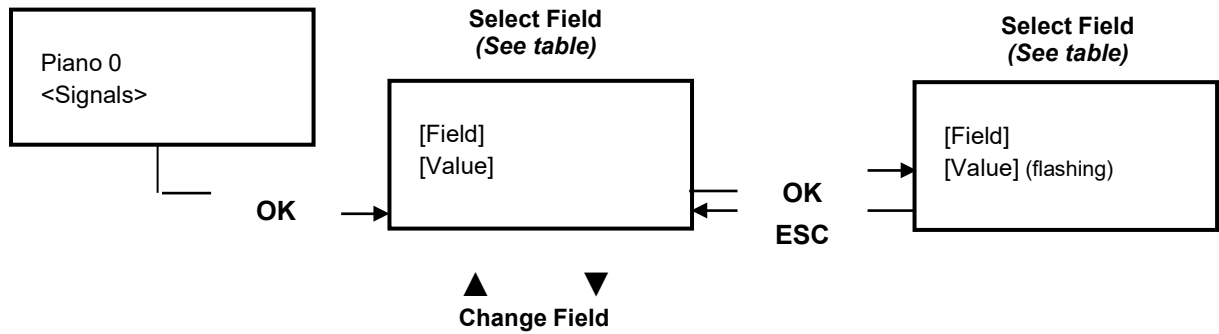
Door B	Same command option described for door A	◀▶ Choice	Type: 0 1 2	0
Select door B at	Configuration of door B for each floor: set access to	◀▶ Choice	Yes; No;	Pkg. Door





Parametro	Description	Navigation	Values	Default value
floor	each floor and open or close door parking at floor (for automatic doors)	▲▼ Change floor	Pkg. Door close; Pkg. Door open	close;
Door B Open/Close time	Door B without limit switch: door opening/closing time	▲ Increase ▼ Decrease	1 s <-> 60 s	10 s
Door B start delay	Door B manual: time before start	▲ Increase ▼ Decrease	0,1 s <-> 9,9 s	2,0 s
Door B powered	Door B powered during the run. Not considered for manual or independent doors	◀▶ Choice	No; Yes	No
Advanced opening	Parameter for the early opening of the doors (beginning of opening before cab stop). It must not be combined with the function of bypass locks <b>NOTE:</b> If this function is used, it is necessary to place the specific magnets § 5.2.3	◀▶ Choice	No; Yes	No

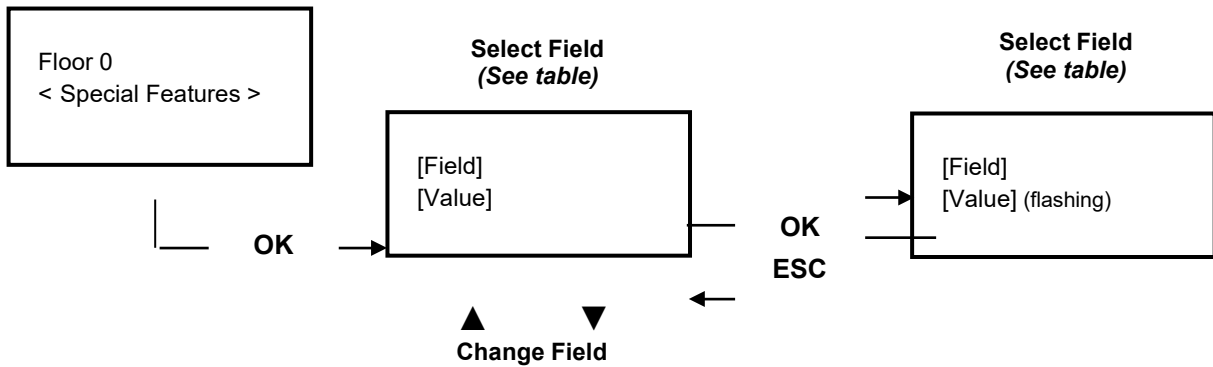
### 4.5 “Signals” Menu



List of Parameters

Parametro	Description	Navigation	Values	Default value
Busy Time	Time of car at floor without direction before taking landing calls. In case of combined automatic doors, timing starts when doors have closed and the shock, photocell and re-opening contacts are not activated	▲ Increase ▼ Decrease	2 s <-> 30 s	10 s
Floor call Registration	Set the blinking for floor buttons upon registration	◀▶ Choice	Permanent; Blinking at floors	Permanent
Manual floor Designation	Manual setting of alphanumeric characters for serial position indicators. Setting must be done for each floor	◀▶ Select Field ▲▼ Change Value	- ; 0 <-> 9 ; A <-> Z	
Delay EME	Emergency selection (VVVF only): 0 s for lifts with EME Board >= 1 s for lifts without EME Board	▲ Increase ▼ Decrease	0 s <-> 30 s	0 s

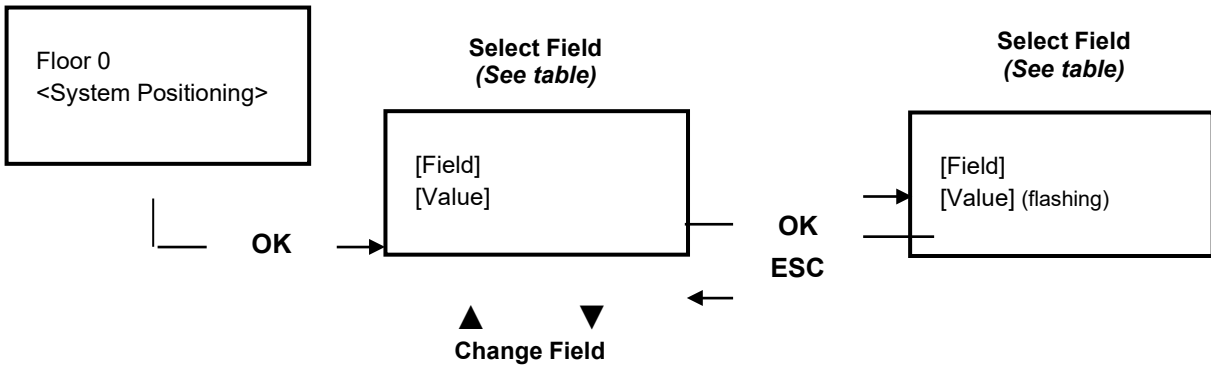
### 4.6 Menu “Special Features”



List of Parameters

Parametro	Description	Navigation	Values	Default value
Reset in	Direction of travel during reset procedure	◀▶ Choice	Down; Up	Down
Final limit switch test	Test of the correct functioning of final limit switch: by setting “Yes”, lift moves upward until at low speed until the final limit switch is reached	◀▶ Choice	No; Yes	No
Temperature control	Enables car stop during travel in case of high temperature of the machine / oil pump	◀▶ Choice	No; Yes	No
Automatic Return	Parameters for car automatic return at floor: Return floor and Minimum waiting time before automatic return	◀▶ Select Field ▲▼ Change Value	No 0 <-> No. floors 1 min. <-> 15 min.	No 0 15 min.
Timed car light	Delay for car light. Timer starts from the moment when no further calls are registered and “busy” signal is off. By setting the value “0”, car light is permanently on.	▲ Increase ▼ Decrease	0 = permanent light 1 <-> 239 sec	1
Monitor RSP <i>(Appendix B)</i>	Enables the shaft access control feature in lifts with reduced pit/headroom. Each door lock is connected to its landing panel and activates the RSP fault in case of manual opening (with key). This fault prevents any movement of the car until manual reset is performed.	◀▶ Choice	No; Yes	No
Automatic Calls	When lift is in normal mode, “Automatic calls” can be activated to perform a specific calls number (up to 120 calls or unlimited) in steps of one minute. However is possible to enable or not the doors functionality (the system will also continue to accept floor calls simulating programmed calls, if enabled).The function ends automatically when machine is turned off or if the system is in inspection mode.	▲ Increase ▼ Decrease  ◀▶ Select Door	0 <-> 120  ∞  Yes - No	0   Yes
Fire-fighters	Parameters For Fire evacuation. If provided, when the floor key closes (Required SHAFT BDU) The car is parked at the floor indicated with the doors open. <b>NOTE:</b> the evacuation does not provide maneuvers in presence, so it is recommended to use on systems with automatic doors.	◀▶ Choice ▲▼ Change value	No; Yes 0 <-> Num. floor	No
Reset	Parameter for selecting the type of gear for the reset maneuver: -) Standard (Following the operation given by the „Type of operation“ parameter) -) Constant pressure: the cab can move only with constant pressure (cabin / floor).	◀▶ Choice	Constant Pressure; Standard	Standard

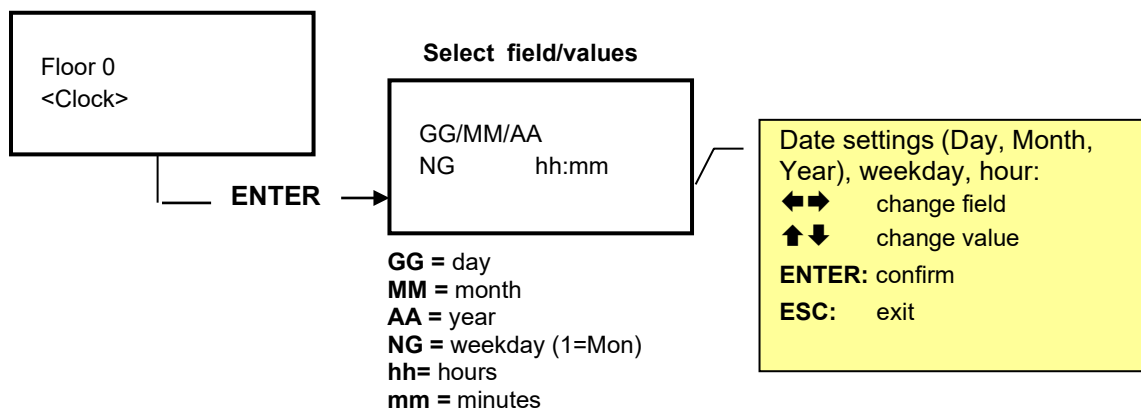
### 4.7 “System Positioning” Menu



List of Parameters

Parameter	Description	Navigation	Values	Default value
Delay Dir.-BRK	Start delay between commands FWD/REV and X5	▲ Increase ▼ Decrease	0,0 s <-> 3,0 s	0,0 s
Delay BRK-S	Start delay between commands X5 and speed (X1)	▲ Increase ▼ Decrease	0,0 s <-> 3,0 s	0,0 s
Delay BRK-Dir.	Hold up of commands FWD/REV and X5 at arrival (soft stop)	▲ Increase ▼ Decrease	0,0 s <-> 3,0 s	1.5 s

### 4.8 “Clock” Menu



**NOTICE:** In case of power outage, clock settings are saved only if batteries are connected.

## 5. Adjustment of car position and stopping accuracy

### 5.1 Definitions

Code	Description
AGH	Top floor deceleration limit switch
AGB	Bottom floor deceleration limit switch
FAI (DOWN)	Contact for car stop (downward run) and deceleration point (upward run)
FAS (UP)	Contact for car stop (upward run) and deceleration point (downward run)

### 5.2 Principle of functioning of FAI / FAS (DOWN/UP) counting system

Through FAI/FAS sensors (two NO magnetic sensors) the JUNIOR controller manages the car positioning and detects the car deceleration and stopping points.

Possible reading errors are compensated at each passage on AGB and AGH limit switches.

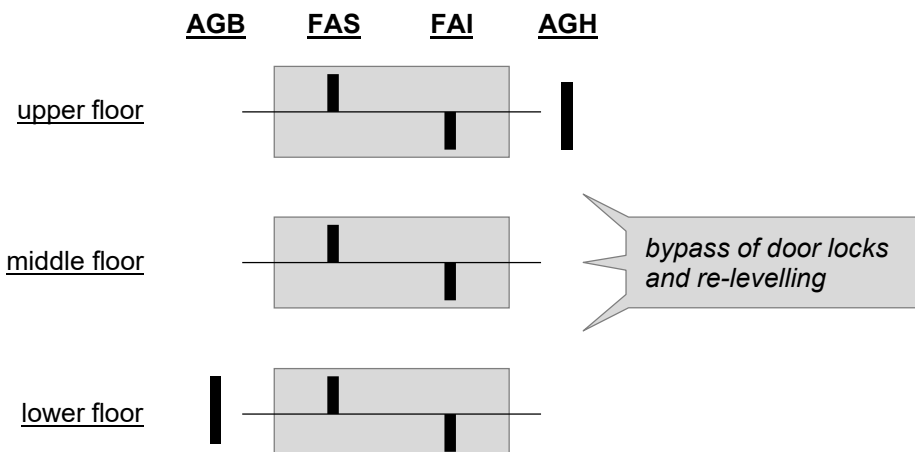
#### 5.2.1 Floor stopping accuracy adjustment

The adjustment of exact stopping level at each floor can be achieved by moving upward or downward the relevant magnets at that floor.

#### 5.2.2 Passage to Low Speed (standard floor)

Deceleration points for standard floor is based on FAI/FAS sensors. During upward run, deceleration starts when FAI sensor is engaged and the car stops when FAS sensor is engaged too (at floor, both sensors are activated at the same time). During downward run, deceleration starts when FAS sensor is engaged and the car stops when FAI sensor is engaged too.

The door zone (bypass of door locks for manual doors) and enabling of releveling is given by the simultaneous activation of both inputs FAI and FAS. The following picture shows an example of magnet positioning for a 3-stop installation.



At floor, the signals from the two sensor must be both activated to ensure the correct sequence of signal switching. In addition, at top / bottom floors deceleration points are enabled by AGB (downward run) and AGH (upward run) sensors.

### 5.2.3 Low speed in case of advanced opening

The management of the deceleration and stop points for these floor is based on the two FAI and FAS signals. In downward the slowdown is given by the activation of the FAS sensor and the stop from the activation of the FAI + FAS sensor (on the plane the two impulsors are active at the same time). In upward the slowdown is due to the activation of the FAI sensor and the stop from the activation of the FAI + FAS sensor.

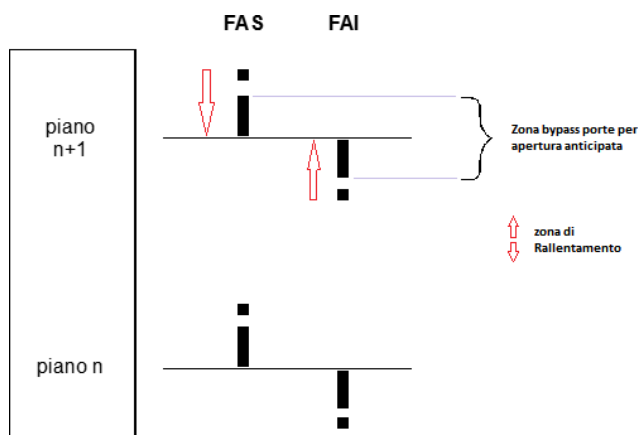
The slowing magnets must be of reduced length (2 cm) and are not necessary on the extreme surfaces:

- a) For the lower floor the downward slowing magnet is replaced by the activation of AGB
- b) For the higher floor the slowing down magnet is replaced by the activation of AGH.

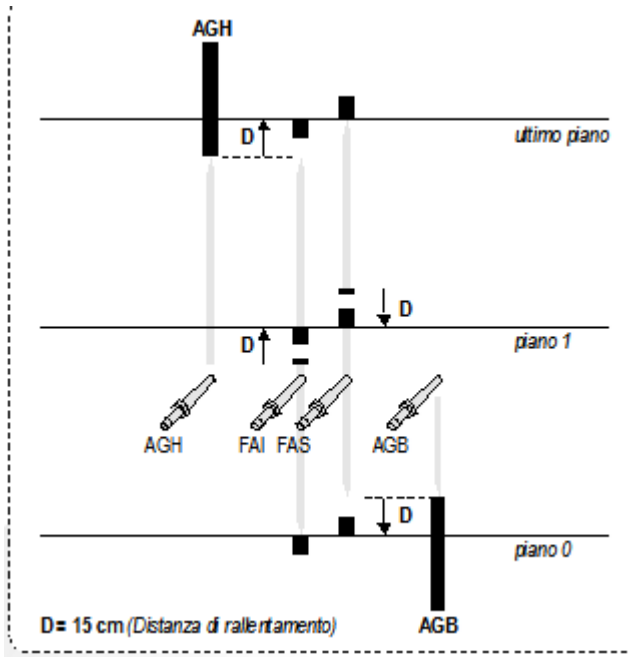
The magnets of the door area must be sized in such a way as to ensure that the door can open in an area that does not put users at risk (there may be a step between the cabin and the threshold when approaching the floor (magnet length 5) cm).

The Advanced opening function must not be combined with the function of bypass locks.

At floor, the signals relative to the two magnets must be superimposed (the magnets themselves may not be overlapped due to the sensitivity of the sensor itself) to guarantee a correct signal switching sequence.



The following figure shows an example of positioning the signals for a three-stop system.



## 6. Appendix A – USB-based SW updating procedure

1. Copy the latest SW file on a USB key.
2. Switch on the controller and fully open the safety chain.
3. Open the INT board plastic lid (Motherboard).
4. Insert the USB key in the slot.
5. Check that the LCD display shows the correct SW version (e.g.: SW 2.0.5).
6. The display shows a progress bar during download (~20 sec).
7. Wait for **RUN** led (green) to flash
8. Remove the USB key. The system completes the update and restarts automatically the new software.



## 7. Appendix B – RSP Monitor

Enable the RSP parameter on <Specials> Menu (§4.6).

RSP fault is activated when one of the auxiliary door lock contact (NC) is open. When this happens, the system is blocked and the cabin can be moved only in inspection mode.

See wiring schematics for proper connection of this contact.

### **Protections:**

- **Top of car:** lift technician must enable the protection on the top of the car before operating. This protection disables the upward run of the car.
- **Pit:** lift technician must enable the protection in the shaft pit before operating. This protection disables the downward run of the car.

### **End of inspection mode:**

At the end of the intervention, the technician must:

- Remove the protections and switch the selector in normal operation mode;
- Exit from the shaft;
- Operate the dedicated test “Reset RSP” (§3.3).



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