

Pitagora 4.0

Contents

[Safety and usage cautions](#)

[Description of PB 4.0 motherboard](#)

[Main functions](#)

[Specifications and descriptions of inputs and outputs](#)

[Integrated Programming Module](#)

[Remote programming module](#)

[Fusion APP](#)

[Mother Board 4.0](#)

[Firefighters maneuvers](#)

[Oil/Motor Temperature Control](#)

[Weight Load Control](#)

[Position/Speed Control with DMG Encoder](#)

[Elevator car Position/Speed Control with Motor Encoder](#)

[Door Command](#)

[Protection Against Electrical Interference](#)

[Main Connections and Temporary Operations](#)

[Learning Procedure of floors](#)

[Normal Service Mode](#)

[Shaft: Access](#)

[EN81-20 Configuration](#)

[EN81-21 Installation with door's Bistable contacts](#)

[Installation with door's Monostable contacts](#)

[Changing system parameters](#)

[V3 Screen Menu map](#)

["System Status" Menu](#)

["Faults" Menu](#)

["I/O Status" Menu](#)

["Configuration" Menu](#)

["Doors" Menu](#)

["Signalisation" Menu](#)

["Special Features" Menu](#)

["System Positioning" Menu](#)

["VVVF" Menu](#)

["Rec Parameters" Menu](#)

["Clock" Menu](#)

[Troubleshooting](#)

[Elevator car Positioning System and Stopping Accuracy](#)

[ELGO LIMAX 33 CP Absolute Encoder Counting System](#)

[DMG Encoder based Counting System](#)

[Lift speed and Deceleration distance](#)

[Annexs](#)

[Annex 1 - Multiplex Parameters Setting](#)

[Annex 2 - Test and measures](#)

[Annex 3 - Instructions for Software update](#)

[Annex 4 - VVVF Frenic Lift Setting](#)

[Annex 5 - Rollback control and ride comfort](#)

[Annex 6 - Unbalancing Rescue Operation's](#)

[Annex 7 - Control Panel](#)

[Annex 8 - UCM Circuit](#)

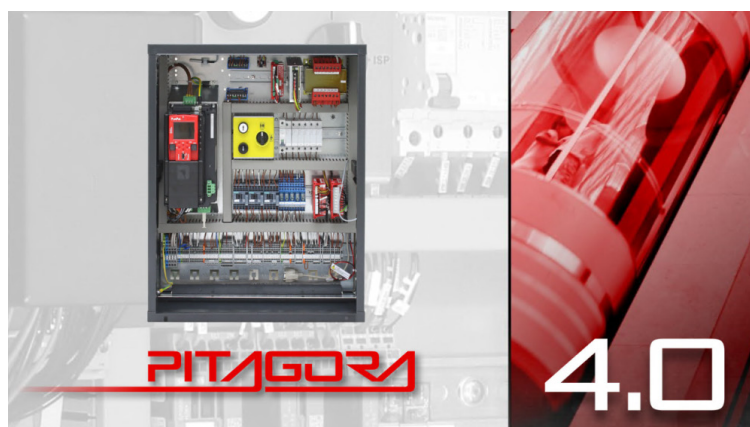
[Annex 9 - Installation Type](#)


[Annex 10 - Shaft Protection](#)

[Annex 11 - Fire operation programming procedure](#)

[Annex 12 - Timing Diagrams](#)

[Download](#)



 You can download the PDF quick start guide at the following link:

[Quick Start Guide](#)

To read the complete guide, keep scrolling the page.

Safety and usage cautions

Before installing our products, we recommend you to consult the section about safety and usage cautions at the link below.



INSTALLATION

The control panel must be installed indoors with a pollution degree of no more than 2.

The enclosure of the control panel has an IP2X degree of protection.

The installation and maintenance of the control panel must be done by qualified and experienced personnel after careful reading of the manuals and electrical diagrams supplied with the control panel.

Electrical protection must be carried out by means of Automatic circuit breaker and earth-leakage protection coordinated with the earthing system which are the responsibility of the customer unless otherwise specifically requested.

Refer to the electrical diagram supplied with the control panel for the following protection circuits:

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

Measures for protection against electric shock:

- The control panel casing is metallic and must be connected to EARTH as indicated in the wiring diagram supplied with the control panel.
- The command and control circuits (24V) are galvanically separated from the electrical network as indicated in the electrical diagram supplied with the control panel.
- The safety circuit is galvanically separated from the electrical network as indicated in the electrical diagram supplied with the control panel.

MAINTENANCE

For the maintenance of the control panel, refer to the manuals provided with the control panel and check the status of the batteries of the alarm circuits and of the return to floor circuit (if present) during the periodic inspections of the system.

For the transport and handling of the control panel, refer to the instructions on the packaging.

Description of PB 4.0 motherboard

The control board of the Pitagora 4.0 system is based on 32-bit electronic technology and operates all types of electric and hydraulic lifts. Serial and/or parallel connections to pushbutton panels (cabin and floor) may be added. It is particularly suitable for VVVF electrical installations, also those equipped with the elevator car uncontrolled movement system (Amendment A3 or EN81-20 / 50).

Main functions

- Control of any kind of electrical and hydraulic system
- Up to 28 floors with serial control and up to 12 floors with parallel control
- CAN Bus serial line to connect display and serial Landing Operating Panels
- CAN Bus serial line for the serial elevator car communication
- APB; Down Collective, Full Collective
- Multiplex (max 6) systems control
- Alternative or selective door control on through or adjacent access systems
- Lift position control by magnetic contacts, incremental DMG shaft encoder, motor encoder or ELGO LIMAX 33 CP Absolute Positioning System
- Programming/diagnostic Interface, on board and/or remote.
- Status diagnostic, errors, failures and I/O status

- VVVF parameters and diagnostics handling (only FUJI FRENIC LIFT LM2)
- Advanced control of VVVF with speed, comfort and precision stop control
- Software upgrading via USB Device
- RS232 serial line for PC and GPRS modem connection
- Compatibility with all DMG products
- Compatibility with all the +A3 solutions for electrical and hydraulic systems
- Protection of shaft access (Unauthorized Shaft Access)

Specifications and descriptions of inputs and outputs

The 4.0 Mother Board contains hardware and software that allows control of the elevator and all its peripherals. Through the integrated and/or remote programming modules it allows access to all available features. Inputs and outputs are connected to all electronic and electromechanical devices in the controller and in the lift.

Integrated Programming Module

The Mother Board has a removable programming module that allows viewing and editing of all the basic parameters for the control panel management and configuration. In VVVF's version, also FUJI's parameters of the basic (menu VVVF BASE) and advanced (VVVF ADVANCED menu) configuration may be viewed and edited.

For details of the programming module operation and an extensive management system menu, see paragraph [changing system parameters](#).

Remote programming module

An alternative way to access the configuration menu of the controller, in the view/modification mode, is by connecting the removable keypad of the DMG V3 Playboard (PlayPad), to the connector PLP V3, mounted on the Lift Control Board.

This module can be connected in various ways:

- Connected directly
- Connected by a dedicated extension cable directly on the board (in the engine room)
- Connected to the board on the elevator car roof (TOC) in the case of lifts with DMG pre-wired serial devices.

Fusion APP

An alternative way to access the controller is based on Fusion App.



Mother Board 4.0



On mother board are present 6 leds for a easy diagnostic:

LED1: (Green led) CAN Multiplex termination active: led switch off when MULX board is connected (termination automatically moves on MULX board of first and last multiplex controller).

LED2: (Green led) CAN Cabine termination active: led switch off when an optional board (PIT8 / 16IO / 16RL) is connected inside controller (termination automatically moves on last optional board).

LED3: (RGB led) color of this led gives info on the internal status of lift according following table:

Color	Status
Led off	The system is performing the reset procedure
Green	The system is in normal operation mode
Yellow	The system is in inspection mode
Pink	The system is in temporary operations mode
Purple	The system is out of service (parking of cabin)
Cyan	The system is running in priority mode (LOP / CAR)
Red	The system is operating in Fire-fighters mode
White	The system is performing the emergency procedure
Blue	The system is performing the elevator car drift control procedure

LED4: (Yellow led) led blinks when board is running.

LED5: (Green led) led on gives the status of SE5 safety chain

LED6: (Red led):

Led Off	No fault active
Led Flashing	One (or more) fault active
Led On	Locking fault active



FJ1	FUJI Interface
J4	FUJI Analog / Serial
J6	Parallel Signals
J8	UCM Circuit
J9	Relevelling Circuit
J10	Light Curtain / > <
J11	Safety Chain
J12	Multiplex CAN
J13	Car at Floor
J14	Hydro Command
J15	EN81-21 Circuit
J16	Encoder Position
J18	Environment Temperature
J19	PME Panel
J20	Out Spare
J21	Emergency Circuit
J22	Motor Relay
J23	Brake Relay
J25	Batteries Test
J26	Optional Boards
M1	Power Supply

Controller power supply

Power supply from a commercial stabilized power supplier.

The negative terminal of the power circuits and the battery charger must be connected to the ground.

Internal Clock power supply: Super Capacitor (autonomy of 5 days without power supply).

Encoder Position

Positioning system based on an incremental encoder:

- DMG Shaft Encoder or
- Motor Encoder (only for VVVF Gearless Motor Lift)

In case of Absolute Encoder Positioning system this connector is not used.

Relevelling Circuit

Circuit to make Door Safety Contact Bypass for:

- Pre opening and/or
- Re-levelling

In case of Absolute Encoder Positioning system this connector is not used.

The circuit management of the re-leveling operation consists of a Safety Module and a Safety Relay.

This circuit allows by-pass of the safety contacts of doors, thereby permitting movement of the cab with doors open at reduced speed in the permitted area (unlocking doors area) in the case of lowering the level of the elevator car, not precise elevator car stopping, or doors pre-opening. The ISO output closes to GND.

- ISO output (safety relay contact by-pass doors) open collector Max 24V 100mA
- Input CCISO (Monitor ISO safety relay) closure to GND (NC) I = 5mA
- Input TISO (Monitor Safty module) closure to GND (NC) I = 5mA
- S11-S12 (free contact) close when ISO1 is closed

The Second enable signal for the Safety module comes directly from a second sensor (ISO2) and it must close to GND.

Optional Board

DMG Optional board for:

- Parallel Prewired Pushbuttons (PIT8)
- 16 relays output Board (16RL): The expansion card is necessary in particular to drive parallel displays (1 Wire / Floor, 1 Wire / Segment, Gray Code, binary) as the direct outputs available
- 16 Input/Output Board (16IO)

Emergency Circuit

Circuit for complete Emergency or Evacuation with Brake opening.

PME Panel

Connection to the Control Panel inside the cabinet.

Parallel Signal

Connection to the APPO Board. It includes all parallel signals available on the terminal block inside the control panel

Environmental Temperature

Connection to the Environmental Temperature Sensor.

To use the Environment Temperature Control function the DMG temperature sensor module (Cod. Q40.SND). This function stops the system when the temperature of the engine room drops below the minimum or increases above the maximum set threshold.

Multiplex CAN

Connection to the MULX Board. It includes the CAN line for Multiplex installations.

For further information on connections and parameters see [ANNEX I](#).

Light curtains and Close door button

Use only in completely parallel Configuration. Connection to the screw terminal of cabinet.

UCM Circuit

Connection to the circuit for UCM solution.

For further information on connections and parameters see [ANNEX VIII](#)

Batteries Test

Connection to the CHAR Board. It includes the signals for:

- Low Batteries
- Phase sequence (only Hydro)
- Backup mode

Output Spare

Generic Output used for special functions.

Safety Chain

Connection to the SECU Board. It includes the 7 points reading from the safety chain. The system is based on an opto insulated circuit connected to earth (Inside SEC Board):

- Input SE0 <-> SE6 opto-insulated 48 Vdc

Above the safety circuit, a suitably sized magnetic circuit breaker ($I_{max} = 0,5 \text{ A}$) must be provided.

- *SE0 is the start point of Safety chain (after DIS Protection inside the controller)*
- *SE1 controls SHAFT STOP zone and PIT Inspection Box*
- *SE2 controls Top of elevator car STOP and TOC Inspection Box*
- *SE3 controls Limit Switches, Safety Gear, Overspeed Governor*
- *SE4 controls FLOOR PRELIMINARY LOCKS*
- *SE5 controls FLOOR LOCKS*
- *SE6 controls CAR DOORS and Pre-triggered's contact systems*

If the limit switch, or Overspeed governor or Safety Gear is activated (safety chain point SE3 opens), the system is set out of service.

To set it back in service you must reset the SE3 error via the programming module. Obviously the safety contact of the over run final limit switch must first be reset.

FUJI Analog and serial line

Connection to the FUJI used in case of remote Inverter.

81-21 Circuit

Connection to the Circuit to manage the Protection in case of Installation with Reduced Space in the PIT. It includes management of Bistable circuit on doors and Protection devices (pre-triggered system or Manual Protection in the Pit). For further information on connections and parameters see [ANNEX IX](#).

Car at floor

Signal output from Door zone sensor for luminous signal on cabinet.

Hydro Command

Connection to the COIL Board. It includes the moving commands for hydro installations. It can be used also in case of Remote Inverter installations.

Motor relay

Connection to the relay for Motor Contactors (or enable signals in case of Contactorless installation). It includes also the Main Contactors' monitor input.

Brake relay

Connection to the relay for Brake Contactors (or valves in case of Hydro installation). It includes also the Brake Contactors' monitor input.

FUJI Interface

Connection to the FUJI interface inside the inverter.

Firefighters maneuvers

The system has the following inputs for firefighters maneuvers:

- Input POM (key of floor): closure to GND (NC / NO) I = 5mA
- Input CPOM (elevator car key): closure to GND (NC / NO) I = 5mA

For further information on connections and parameters see [ANNEX XI](#)

Oil/Motor Temperature Control

In the event of the motor overheating, the contact opens and the lift is put out of service.

Blocking of the lift can be immediate or when the call ends, depending on the setting.

Weight Load Control

When COM input is active, floor reservation calls are neither recorded nor managed.

When SUR input is active the elevator car does not start and the acoustic signal in the elevator car is activated. The SUR signal is ignored while driving.

Position/Speed Control with DMG Encoder

If floor counting is carried out by DMG incremental encoder, position, deceleration and stop are controlled by counting the pulses coming from the DMG encoder. The counting of the pulses is suitably corrected (reset) by the signals at the top and bottom (AGB / AGH) and from the signal of the door zone (ISO1).

Elevator car Position/Speed Control with Motor Encoder

This control system can only be used on systems with inverter VVVF with a Gearless Motor.

Location, stop and deceleration are controlled by counting the pulses coming from the encoder of the motor. The counting of the pulses is suitably corrected (reset) by the reset signals at the top and bottom (AGB / AGH) and from the signal of door zone (ISO1).

The same J16 input connector is used to connect, with the appropriate cable, the encoder interface card, which is inside the FUJI inverter.

Parameter "Count System" should be set as "engine encoder". In menu choose 2048 number of pulses. Subsequently the dimensional parameters of the motor pulley and the type of pulling system should be inserted. Next the system asks to set the shaft length in order to set the correct sensitivity. Only after these steps are completed, Will it be possible to run the automatic floor levelling procedure.

Door Command

The door command board can command either one or two doors with alternative, selective or passage through opening. Output and inputs are available on the jst connectors on the TOC board and on APPO board (in the controller).

The doors can be automatic, semi-automatic or manual:

DOOR A

- *ROA output (relay open door A) open collector max 24V 100mA*
- *RFA output (relay closing door A) open collector max 24V 100mA*
- *Input BRA (A door opening button relay) closed to GND (NA) I = 5mA*
- *Input CEA (A door photocell) closed to GND (NA) I = 5mA*
- *Input FOA (A door opening limit) closed to GND (NA) I = 5mA*
- *Input FFA (A door closing limit) closed to GND (NA) I = 5mA*

DOOR B

- *ROB output (relay opening door B) open collector max 24V 100mA*
- *RFB output (relay closure door B) open collector max 24V 100mA*
- *Input BRB (B door opening button relay) closing to GND (NA) I = 5mA*
- *Input CEB (B door photocell) closing to GND (NA) I = 5mA*
- *Input FOB (B door opening limit) closing to GND (NA) I = 5mA*
- *Input FFB (B door closing limit) closing to GND (NA) I = 5mA*

Protection Against Electrical Interference

The boards has been designed to be protected against various types of interferences, following standard/normal requirements according to the requirements of the norm, against accidental mistakes and localization. Never the less we advise that the following rules are respected:

- Connect all metal masses to ground;
- Connect all unused conductors to ground (on the side of the cabinet);
- Connect the anti-noise filters 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 a 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 positive common “CAME+” and the anode to the negative “CAME-“;
- For the wiring towards the elevator car, if signals and 24V power supply wires are present in the same travelling cable, make sure these are kept apart (safety chain circuit, doors or retiring ramp power supply, 230V etc.).
- For installations with VVVF all the instructions provided by the manufacturer must be fulfilled, regarding both the filters and the wiring. For a proper operation of the system, it is essential to use a shielded cable for connections to the motor and to the braking resistor;
- Always avoid placing signal cables in the vicinity of the power cables and / or power supply.

Main Connections and Temporary Operations

According to the “Temporary Operations” page of the electrical wiring diagrams schematic page:

1. Connect the main power supply
2. Connect the traction motor and Brake Resistor or the hydraulic pump motor
3. Connect the brake or valves
4. Connect the Motor temperature sensor or Oil temperature sensor
5. Connect the inspection box for temporary operations (Using the Temporary Cable) connecting them to the terminals (screw)
6. Switch on main power
7. Carry out the Motor Tuning procedure (traction only) ([Annex IV](#))
8. Install the Electrical System ([Quick Start Guide](#))

Learning Procedure of floors

If the Controller is equipped with Absolute Encoder or DMG Encoder or Motor Encoder it is possible to take advantage of the floor position learning feature, which allows for a faster system configuration and fine tuning. The procedure is different according to the type of encoder, as described in following sections:

+ ELGO LIMAX 33CP: Manual Teach Procedure

+ DMG Encoder or Motor Encoder: Automatic Learning Procedure of floors

Normal Service Mode

Once all above procedures are completed, it is possible to put the system into Normal Service mode.

For ride comfort improvements check [ANNEX 5](#).

The system performs a reset run and stops at the lowest floor. If no error occurred, it is possible to manually fine tune the precision of stop at each floor as indicated in [rope and pulley Encoder positioning system](#) or [Optical/Magnetic positioning system](#).

To facilitate checks and installation start-up, please refer to the menu “Configuration” => “Test” and the [Annex II](#).

Fine tuning of floor stopping accuracy

Once the self learning procedure is completed, it is possible to manually fine tune the stopping accuracy at each floor by using the PLAYPAD programming module, without having to access the shaft.

Regulation of stopping accuracy:

1. *Make sure the installation is in the "NORMAL SERVICE" mode*
2. *Use the PLAYPAD module directly with the controller or remove it and connect it to the TOC board on the top of the cabin by using the cable (optional).*
3. *Enter the <Positioning> menu, select "Floor Position" parameter for the floor to be adjusted (use Left / Right keys to select the desired floor). The value displayed at the bottom of the Playpad screen indicates the current floor position (in mm) for the selected floor; press [ENTER] to modify.*
4. *Increase or decrease the indicated position by using UP/DOWN keys on the PLAYPAD module.*
5. *Press [ENTER] to save the updated value.*
6. *Check actual stopping accuracy by calling the lift to the selected floor. If needed, repeat steps 3, 4 and 5.*
7. *Repeat the procedure for every floor*

Shaft: Access

Hint: For systems with encoder counting it is possible to activate the access procedure in the shaft without the system being stopped due to the interruption of the safety chain (opening of the landing doors). It is also helpful in EN81-1 installation.

With the lift in normal operation:

- Keep the doors open by keeping the door BRA or BRB button pressed
- On the elevator car control panel press the current floor button 3 times.
- The panel will emit a continuous sound to warn of the activation of the procedure which temporarily excludes all calls. (procedure can be deleted by pressing the door open button again)
- Exit from the Cabin;
- The Controller closes the doors and moves lift 2 meters down with slowdown and standard stop. The technician can open the doors and easily access the cab roof. If the cabin does not have enough space to descend, it moves upwards by 2.5 meters (pit access and / or control of the cabin bottom).
- If you do not enter the well, the Cabin remains stationary in this condition for a maximum time of 10 seconds before returning to normal service (new calls are not available in this time).

Access to the shaft for systems compliant with the EN81-20 / EN81-21 standard requires that, after an access and subsequent exit from the lift shaft by an authorized person, there is a reset procedure that excludes the return to automatic operation of the lift. Below are the instructions for entering and exiting the shaft in the case of 81-20 or 81-21 systems.

EN81-20 Configuration

Parameter: See [Annex X](#).

Access to the Pit

Is detected by operating the pit stop switch or by switching the pit control panel on to 'inspection'. (both conditions open the safety chain on point SE1).

This condition activates the Fault RSP (code 20) and prevents the movement of the elevator car in normal operation (Movement is now possible only in Inspection mode).

After the end of the Inspection manoeuvre the personnel must:

- Return the selector switch and any STOP buttons to 'Normal' and exit the shaft of lift.
- Close the landing doors (check the safety chain) and carry out the reset using one of the following methods:
 - From lowest floor with three quick opening / closing of the release key or.
 - From the panel with three quick presses of button



- From the PlayPad with specific reset (RSP reset).

Characteristics of the auxiliary contact on the door (s) at the lowest floor:

- Monostable NC contact (does not open during normal door operation).

The auxiliary contact is electrically connected to the BDU's Door input or to the terminal (screw) of the controller on the E511 input (NC contacts in series when there are multiple shaft access doors eg. Pit Access Hatch).

No Access the Car roof

No control required for access to the cabin roof.

EN81-21 Installation with door's Bistable contacts

Headroom and reduced pit (Compliance with Article 2.2 of Annex 1 of Directive 95/16 / EC of the European Community)

In systems where the minimum required dimensions in the top and bottom of the shaft cannot be guaranteed, according to the requirements of the regulation EN 81, special alterations must be made to the system and the controller in order to avert the risk of injury to workers carrying out maintenance work in the shaft.

The following is a relevant section from the regulation:

"The lift must be designed and manufactured in order to prevent the risk of crushing when the elevator car is in an extreme position. In order to achieve this, a free space or refuge beyond the extreme positions must be provided. However, in exceptional cases, allowing the Member States the possibility of giving prior approval, particularly in existing buildings, the competent authorities may provide other appropriate means to avoid this risk, if the previous solution is impossible to achieve".

The controller of the lift is able to automatically manage the floor doors opening control in systems with limited space in the extreme points of the shaft. As indicated schematically in the illustration below, the controller must be equipped with a control circuit at the top/bottom of the shaft so that, when the maintenance worker opens the landing door to access the shaft, a contact connected to the dedicated input which provides monitoring of shaft access to the lift controller.

The specific procedure is according to the type of Installation as described in following sections.

The reset procedure is possible only if bistable contacts are open, otherwise the controller checks an automatic reset of bistable contacts (without any reset procedure): so the controller gives a RSP Fault (Cod 121) and it is necessary to open the Bistable circuit and after make a reset procedure.



Parameter: See **Annex X**

Access to the Pit

Is detected by operating the pit stop switch or by switching the pit control panel on to 'inspection'.
(both conditions open the safety chain on point SE1).

This condition activates the Fault RSP (code 20) and prevents the movement of the elevator car in normal operation.
After the end of the Inspection manoeuvre the personnel must:

- Remove the protections (in case of manual protections in the PIT), Return the selector switch and any STOP buttons to 'Normal' and exit the shaft of lift.
- Close the landing doors (check the safety chain) and carry out the reset using one of the following methods:
 - From lowest floor with three quick opening / closing of the release key.
 - From the panel with three quick presses of button.



- From the PlayPad with specific reset (RSP reset).

Characteristics of the auxiliary contact on the door (s) of the lowest floor:

- Monostable NC contact (does not open during normal door operation).

The auxiliary contact is electrically connected to the DOOR Contact input of BDU of the lowest floor.

Access on the Car roof

Access to the shaft is detected by opening a contact using the release key which activates the RSP fault (code 21), preventing the elevator car from moving in normal operation (a run is only possible in 'Inspection' mode). Before entering the shaft of lift, wait for the traffic light to indicate the safe condition (green light).

After the end of the Inspection manoeuvre the personnel must:

- Remove the protections (in case of manual protections), Return the selector switch and any STOP buttons to 'Normal' and exit from the lift well.
- Close the landing doors (check the safety chain) and carry out the reset using one of the following methods:
 - From floor with three quick opening / closing of the reset key (optional).
 - From the panel with three quick presses of button.



- From the PlayPad with specific reset (RSP reset).

Reset fault RSP on the Lift Controller and make coil's reset on the bistable contacts on the Landings

If the controller detects an automatic contact reset (contact close before reset procedure) it gives again a Fault RSP (Cod 121) as a fault on coil's reset circuit.

Characteristics of the auxiliary contact (BERNSTEIN type) on all doors except those on the lowest floor:

- Bistable NC contact (does not open during normal door operation) connected to a dedicated input.
- 230 Vac reset coil.

Optional reset key switches are electrically connected to the BDU's DOOR Contact input.

– Reduced Pit Configuration



Parameter: See [Annex X](#)

Access in the Pit

Access to the shaft is detected by opening a contact using the release key which activates the RSP fault (code 21), preventing the elevator car from moving in normal operation (a run is only possible in 'Inspection' mode). Before entering the shaft, wait for the traffic light to indicate the safe condition (green light).

After the end of the Inspection maneuver the personnel must:

- Remove the protections (in case of manual protections), Return the selector switch and any STOP buttons to 'Normal' and exit from the lift well.
- Close the landing doors (check the safety chain) and carry out the reset using one of the following methods:
 - From the floor with three quick opening / closing of the reset key (optional).
 - From the panel with three quick presses of button



- From the PlayPad with specific reset (RSP reset).

If controller detects an automatic contact reset (contact close before reset procedure) it gives again a Fault RSP (Cod 121) as a fault on coil's reset circuit.

Characteristics of the auxiliary contact (BERNSTEIN type) only on the lowest floor:

- Bistable NC contact (does not open during normal door operation). connected to a dedicated input.
- 230 Vac reset coil

Optional reset key switches are electrically connected to BDU's DOOR Contact input.

Access on the Car roof

No control required for access to the cabin roof.

– Reduced Head and Pit Configuration



Parameter: See [Annex X](#)

Access in the Pit or Access on the Car roof

Access to the shaft is detected by opening a contact using the release key which activates the RSP fault (code 21), preventing the elevator car from moving in normal operation (a run is only possible in 'Inspection' mode). Before entering the lift shaft, wait for the traffic light to indicate the safe condition (green light).

After the end of the Inspection manoeuvre the personnel must:

- Remove the protections (in case of manual protections), Return the selector switch and any STOP buttons to 'Normal' and exit from the lift well.
- Close the landing doors (check the safety chain) and carry out the reset using one of the following methods:

- From floor with three quick opening / closing of the reset key (optional).
- From the panel with three quick presses of button.



- From the PlayPad with specific reset (RSP reset).

If controller detects an automatic contact reset (contact close before reset procedure) it gives again a Fault RSP (Cod 121) as a fault on coil's reset circuit.

Characteristics of the auxiliary contact (BERNSTEIN type) on all doors:

- Bistable NC contact (does not open during normal door operation). connected to dedicated input.
- 230 Vac reset coil

Optional reset key switches are electrically connected to BDU's DOOR Contact input.

Installation with door's Monostable contacts

Headroom and reduced pit (Compliance with Article 2.2 of Annex 1 of Directive 95/16 / EC of the European Community)

With the same consideration of [previous chapter](#) it is possible to manage installation with monostable contacts on the landing doors to monitor the shaft access.

In a case where monostable door contacts are used, present in the controller is a bistable circuit. The reset procedure is possible only if the bistable circuit is open, otherwise the controller gives a specific Fault RSP (§ 6): it is necessary to open the Bistable circuit and after carry out the reset procedure.

The specific procedure is according type of Installation as described in following sections.

– Reduced Head Configuration



Parameter: See [Annex X](#)

Access in the Pit

Access to the pit is detected by operating the pit stop switch or by switching the pit control panel on to 'Inspection'. (both conditions open the safety chain on point SE1). This condition sets the Fault RSP (code 20) by preventing the movement of the elevator car in normal operation.

After the end of the Inspection manoeuvre the personnel must:

- Remove the protections (in case of manual protections in the PIT), Return the selector switch and any STOP buttons to 'Normal' and exit the lift shaft.
- Close the landing doors (check the safety chain) and carry out the reset using one of the following methods:
 - From lowest floor with three quick opening / closing of the release key.
 - From the panel with three quick presses of button.



- From the PlayPad with specific reset (RSP reset).

Characteristics of the auxiliary contact on the door (s) of the lowest floor:

- Monostable NC contact (does not open during normal door operation).

The auxiliary contact is electrically connected to the DOOR Contact input of BDU of the lowest floor.

Access on the Car roof

Access to the shaft is detected by opening a contact using the release key which activates the RSP fault (code 21), preventing the elevator car from moving in normal operation (a run is only possible in 'Inspection' mode). Before entering the lift shaft, wait for the traffic light to indicate the safe condition (green light).

After the end of the manoeuvre the personnel must:

- Remove the protections (in case of manual protections), Return the selector switch and any STOP buttons to 'Normal' and exit from the lift well.
- Close the landing doors (check the safety chain) and carry out the reset using one of the following methods:
 - From floor with three quick opening / closing of the the release key.
 - From the panel with three quick presses of button.



- From the PlayPad with specific reset (RSP reset).

Characteristics of the auxiliary contact on all doors except those on the lowest floor:

- Monostable NC contact (does not open during normal door operation).
- Keys are electrically connected in series to the screw terminal of the controller.

– Reduced Pit Configuration



Parameter: See [Annex X](#)

Access in the Pit

Access to the shaft is detected by opening a contact using the release key which activates the RSP fault (code 21), preventing the elevator car from moving in normal operation (a run is only possible in 'Inspection' mode) Before entering the shaft, wait for the traffic light to indicate the safe condition (green light).

After the end of the Inspection manoeuvre the personnel must:

- Remove the protections (in case of manual protections), Return the selector switch and any STOP buttons to 'Normal' and exit from the lift well.
- Close the landing doors (check the safety chain) and carry out the reset using one of the following methods:
 - From floor with three quick opening / closing of the release key.
 - From the panel with three quick presses of button.



- From the PlayPad with specific reset (RSP reset).

Characteristics of the auxiliary contact on all doors except those on the lowest floor:

- Monostable NC contact (does not open during normal door operation).

Key are electrically connected in series to the screw terminal of the controller.

Access on the Car roof

No control required for access to the cabin roof.

– Reduced Head and Pit Configuration



Parameter: See [Annex X](#)

Access in the Pit or Access on the Car roof

Access to the shaft is detected by opening a contact using the release key which activates the RSP fault (code 21), preventing the elevator car from moving in normal operation (a run is only possible in 'Inspection' mode). Before entering the lift shaft, wait for the traffic light to indicate the safe condition (green light).

After the end of the Inspection manoeuvre the personnel must:

- Remove the protections (in case of manual protections), Return the selector switch and any STOP buttons to 'Normal' and exit from the lift well.
- Close the landing doors (check the safety chain) and carry out the reset using one of the following methods:
 - From floor with three quick opening / closing of the release key.
 - From the panel with three quick presses of button.



- From the PlayPad with specific reset (RSP reset).

Characteristics of the auxiliary contact on all doors:

- Monostable NC contact (does not open during normal door operation).

Key are electrically connected in series to the screw terminal of the controller.

Changing system parameters

V3 Screen Menu map

– V3 Screen Menu map

LIFT CONTROL BOARD DMG S.p.A.		Language? French, English, Portuguese, Italian, Russian, German, Dutch ENTER: confirm / ESC: exit
▲ ▼		▲
Code? ** Password **	----- ENTER ---->	System Status
		▲ ▼
		Faults
		▲ ▼
		I/O Status
		▲ ▼
		Configuration
		▲ ▼

		Doors
		▲ ▼
		Signals
		▲ ▼
		Special functions
		▲ ▼
		Positioning
		▲ ▼
		VVVF
		▲ ▼
		Rec.Parameters
		▲ ▼
		Clock



After selecting the desired language Is necessary to perform the software Upgrade ([Annex III](#))

“System Status” Menu

It is easily accessed from the main window of the PlayPad, by pressing once the ENTER key.

– Reference table

System Status	Description	Visualization on Serial display
Resetting	The system is performing the reset procedure	O -
In service	The system is in normal operation mode	
Inspection	The system is in inspection mode	OR
Temp. Operat	The system is in temporary operations mode	P
Out of service	The system is out of service	
Car Priority	The system is running in elevator car priority mode (priority key switch activated)	
Fire-fighters	The system is operating in Fire-fighters mode (various operations)	
Emergency	The system is performing the emergency procedure	E
Drift control	The system is performing the elevator car drift control procedure	
Upward operation	The system is running upwards	
Downward operation	The system is running downwards	
Re-levelling	The elevator car is at floor level and is re-levelling	
Still at floor	The elevator car is at floor level, with no registered calls	

System Status	Description	Visualization on Serial display
High speed	The system is running in high speed mode	
Low speed	The system is running in low speed mode	
Door close	The door is completely closed	
Door open	The door is opened (or opening/closing)	
Car full load	The elevator car has been fully loaded	
Photocell A	The input relevant to the photocell entrance A is active	
Photocell B	The input relevant to the photocell entrance B is active	
Light curtain A	The input relevant to the open door button of entrance A is active	
Light curtain B	The input relevant to the open door button of entrance B is active	

“Faults” Menu

This Menu lists the last 60 faults stored into the internal memory of the controller. All faults are described in the [Troubleshooting section](#).

WARNING: In case of black out, the internal memory is saved only if the battery is connected.

Reference table

Floor 0 12:30:56 < Faults >	----- ENTER ----->	Floor 0 < Faults > No faults		
	----- ENTER ----->	Floor 0 < Faults > Faults: 4 Display ?	----- ENTER ----->	< Faults > 3/4 43 = Inspection Pos.: 0 # 1 Cod. 0 17/03/09 10:10 * (see below for details)
		▲ ▼		
Reset all recorded faults (press ENTER to confirm) NOTE: faults are deleted when lift cabin stops		Floor 0 < Faults > Faults: 4 Reset ?		
		▲ ▼		
Clear the detected error on the limit switch (press ENTER to confirm) NOTE: the actual cancellation occurs only in memory system is stopped		Floor 0 < Faults > Faults: 4 Reset XXX? (see table below)		

Fault	Description
-------	-------------

Reset SE3	Limit switch fault; you can clear it only after closing Safety chain.
Reset 82212	Drift control
Reset RSP	RSP fault; for reduced pit and headroom.
Reset UCM	UCM fault; for A3 amendment
Reset ISO	ISO fault; problem detection in the operation monitoring of safety module for advanced door opening / re-leveling.
Reset SCS	SCS Fault; installation 81-20.
Reset UAS	UAS Fault; Special function.

"I/O Status" Menu









	----->>>>>			
OR				
	----->>>>>		----->>>>>	Floor 0 - 12:30:56 < I/O Status >

Table of Parameters

Table of Parameters:

Field	Description	Navigation	Values (group of 12)				
Car call	Simulation of a elevator car call	▲ ▼ (Select floor) ENTER (Confirm) ESC (Exit)					
 Playboard IN-OUT	System Inputs/Output □ = Open Contact ■ = Closed Contact	▲ ▼ (Change group) ENTER (Exit) ESC (Exit)	GROUPS				
			1/9	REM VHS SUR	RED TH1 COM	REV TH2 LE	REV1 REV2 LTMP
			2/9	RMO BRK RDE	RGV RMV RPV	MTR YBRK CCF	CCO CCOB
			3/9	BRA FOA ROA	CEA FFA RFA	BRB FOB ROB	CEB FFB RFB

Field	Description	Navigation	Values (group of 12)				
			4/9	HS BFR OTM	PCA	POM RPH J20	CPOM IEME OEME
			5/9	FLM FLD	BIP GNGM GNGD	511B 511L	DSA 212B E511
			6/9	PWR ENAB	IN_A IN_D	BR1 BYPL	BR2 BYPC
			7/9	FAI ZP	FAS TISO	CAM ISO	AGH AGB CISO
			8/9	REM REM1 REM2	RED RED1 RED2	PME OVS	REV REV1 REV2
			9/9	L-RED L-GREEN BUZZER	GPIO1 GPIO2 GPIO3		
<div></div> <div>VVF IN-OUT</div>	VVVF Inputs/Output □ = Open Contact ■ = Closed Contact	▲ ▼ (Change group) ENTER (Exit) ESC (Exit)	GROUPS				
			1/7	EN FWD REV	X1 X2 X3	X4 X5 X6	X7 X8 0,0 V
			2/7	Y1 Y5A/C	Y2 RST	Y3 30 A/B/C	Y4
			3/7	BUSY ACC DEC	ALM INT BRK	EXT NUV RL	TL VL IL
			4/7	Fout = 0,00 Hz Uout = 0,00 A Vout = 0,00 V			
			5/7	Fref = 0,00 Hz EDC ---V NST ---		Fref = 0,00 Hz TRQ --% NST ---h	
			6/7	Imax = 0,00 A Encoder 0 P/s --- kW MAIN =			
			7/7	Fault VVVF 0 = --- 2 = ---		Fault VVVF 1 = --- 3 = ---	
<div></div> <div>Push buttons</div>	Status of call buttons □ = Button not activated ■ = Button activated	▲ ▼ (Change group) ◀ ▶ (Cab/down/up) ENTER (Exit) ESC (Exit)	GROUPS				
			Cabin side A	7 3	6 2	5 1	4 0
			Cabin side B	7 3	6 2	5 1	4 0

Field	Description	Navigation	Values (group of 12)				
			Push button down side A	7 3	6 2	5 1	4 0
			Push button down side B	7 3	6 2	5 1	4 0
			Upward side A	7 3	6 2	5 1	4 0
			Upward side B	7 3	6 2	5 1	4 0
Fire Sensors	Status of fire inputs □ = Fire inputs off ■ = Fire inputs on	▲▼ (Change group) ENTER (Exit) ESC (Exit)					
 Call registration list	Call registration list □ = Call not registered ■ = Call registered	▲▼ (Change group) ◀▶ (Cab/down/up) ENTER (Exit) ESC (Exit)	Same Groups as PUSHBUTTONS				
[0] Start = ... [1] Start = ... [2] Start = ...	Run Counters [0] partial (resettable) [1] Total [2] Future use	◀▶ (Change) ENTER (Reset and Exit) ESC (Exit)	Date showed is referred to the last reset of partial counter [0]				
Analogic	Analogic measures	▲▼ (Change page) ESC (Exit)	24 V = Power Supply VCAB = Cabinet anc Cabine absorptions VMR = BDU absorptions 24VB = Batteries Voltage +5.0 V = Board Internal power supply TAMB = Ambient temperature sensor PWM = Analogic speed output				
TOC Measures	Analogic measures	▲▼ (Change page) ESC (Exit)	T_SHA = Shaft temperature MAIN = TOC Power Supply COP_A = COP side A absorptions COP_B = COP side B absorptions				
COP Measures	Analogic measures	▲▼ (Change page) ESC (Exit)	MAIN_A = COP A power supply MAIN_B = COP B power supply T_CAR = Cabine temperature				
FLOORS Line	BDU Communication Line	ENTER (Reset) ESC (Exit)	Error: Communications error number FER: Frame Error Rate Date and hour of last reset				
CAR Line	TOC / COP Communication Line	ENTER (Reset) ESC (Exit)	Error: Communications error number FER: Frame Error Rate Date and hour of last reset				

Field	Description	Navigation	Values (group of 12)				
MTPX Line	MULTIPLEX Communication Line	▲▼ (Change page) ENTER (Reset) ESC (Exit)	Error: Communications error number FER: Frame Error Rate Date and hour of last reset				
ELGO model:	ELGO's Diagnostic						

PLAYBOARD IN-OUT table description parameters

Input	Description
SE0	Safety chain Start
SE1	Safety chain pit safety contacts
SE2	Safety chain top of car inspection Box/Stop
SE3	Safety chain final limit switch, safety gear, speed governor
SE4	Safety chain hall doors preliminary contacts
SE5	Safety chain hall doors inerlocks
SE6	Safety chain car doors contacts and pre trigger device (81-21)
CCO CCOB	power contactors control
CISO	Monitor ISO relay
TISO	Safety Module SM1 control
LE	Emergency Light (car light power supply)
BFR	door close button
PCA	Elevator car priority function
POM	Fire-fighters operations (Hall key switch)
CPOM	Fire-fighters operations (Car key switch)
SUR	Overload control
COM	Full load control
HS	out of service function
ZP	door zone signal
RPH	Phase sequence control
REV REV1 REV2	Inspection function (machine room) Inspection function (Top of Car) Inspection function (PIT)
REM REM1 REM2	Inspection up (machine room) Inspection up (Top of Car) Inspection up (PIT)
RED RED1 RED2	Inspection down (machine room) Inspection down (Top of Car) Inspection down (PIT)
TH1 TH2	Motor (Oil) temperature sensor control

Input	Description
IEME	Emergency (power supply failure)
PME	PME selector (emergency evacuation)
AGH AGB	Top deceleration switch Bottom deceleration switch
FAS FAI	Position Sensors (no encoder positioning system)
E511	Optional input for Shaft Access
BYPL BYPC	Door's safety Bypass selector
BRA	Door open button (entrance A)
CEA	Photocell entrance A
FOA	Door open limit switch entrance A
FFA	Door close limit switch entrance A
BRB	Door open button (entrance B)
CEB	Photocell entrance B
FOB	Door open limit switch entrance B
FFB	Fine corsa chiusura (Porta B)
BR1	Brake 1 monitor switch
BR2	Brake 2 monitor switch
IN_A IN_D	Monitor UCM circuit

Output	Description
VHS	Output - out of order illumination
RMV	Output – intermediate speed command
BRK	Output - Brake command
MTR	Output - Motor command
YBRK	Output - Brake command (VVVF)
ISO	Output - Re-levelling command
RGV	Output - high speed command
RPV	Output - low speed command
RMO	Output - up travel command
RDE	Output - down travel command
LTMP	Output - time limited car light command
CAM	Output - retiring ramp command
OEM	Output - emergency command
CCF	Output - Motor phase short Circuit
J20	Output - programmable (connector J20)
DSA	Output - alarms de-activation

Output	Description
511B	Output - Norm 511 Buzzer
511L	Output - Norm 511 Light
212B	Output - Norm 212 Buzzer
FLD	Output - down arrows command
FLM	Output - up arrows command
GNGD	Output - upward gong command
GNGM	Output - downward gong command
BIP	Output – BIP signalization in the cabin
PWR	UCM module power command
ENAB	UCM module enabling command
ROA	Output - door open command (entrance A)
RFA	Output - door close command (entrance A)
ROB	Output - door open command (entrance B)
RFB	Output - door close command (entrance B)
L-RED	Traffic Light signal 81-20/21
L-GREEN	Traffic Light signal 81-20/21
BUZZER	Buzzer signal for bypass 81-20

VVVF IN-OUT table description parameters

Signal	Description
EN	Enable digital input (screw terminal EN)
FWD	Upward digital input (screw terminal FWD)
REV	Downward digital input (screw terminal REV)
X1	High speed digital input (screw terminal X1)
X2	REV speed digital input (screw terminal X2)
X3	Low speed digital input (screw terminal X3)
X4	Ingresso digitale (morsetto X4)
X5	digital input (screw terminal X4)
X6	Ingresso digitale (morsetto X6)
X7	Ingresso digitale (morsetto X7)
X8	Emergency digital input (screw terminal X8)
0,0 V	VVVF analog input (terminals 11-12)
Encoder	Encoder VVVF input (closed loop)
MAIN	VVVF firmware version
Y1	Digital output (terminal Y1)
Y2	Digital output (terminal Y2)
Y3	Digital output (terminal Y3)

Signal	Description
Y4	Digital output (terminal Y4)
Y5A/C	Brake command relays (terminal Y5)
30 A/B/C	Relè (terminal 30 A/B/C)
ALM	Alarm VVVF signalisation
RST	Reset VVVF
ACC	Acceleration
DEC	Deceleration
Fout	Output Frequency
Vout	Output Voltage
Iout	Output current
Imax	Maximum output current

“Configuration” Menu





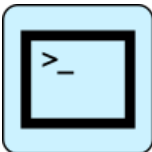
	----->>>>>		----->>>>>	
OR				
	----->>>>>		----->>>>>	Floor 0 - 12:30:56 < Configuration >

Table of Parameters

Table of Parameters:

Parameter	Description	Navigation	Values	Default Value
Temporary operations	Temporary operations mode of the system	◀▶ (Choice)	No; Yes	No
Test	To ease checks and installation start-up. For description, refer to Annex II.			
Code ?	Password protection to access programming	◀▶ (Change characters) ▲▼ (Select characters)	8 characters (0 - 9; A - Z; a - z)	no password

Parameter	Description	Navigation	Values	Default Value
Configuration	Type of wiring configuration: -) Standard wire terminals (Car and floors); -) Serial comm. in the elevator car, 1 line/floor connectors at floors; -) Wire terminals in the car, Serial communication at floors (BDU modules); -) Serial communication for car and floors	◀▶ (Choice)	Car & Fl. STD; Car SER. / Fl. RJ45; Car STD. / Fl. BDU; Car SER. / Fl. BDU	Car SER / Fl. RJ45
Type of control	Type of control for the lift	◀▶ (Choice)	-SAPB; -SAPB record -SAPB constant pressure -Down collective; -Full Collective;	SAPB;
Drive	Traction type: -) Traction VVVF -) Hydraulic – Motor Direct (Dir): -) Hydraulic – Motor Soft Starter (S-S): -) Hydraulic – Motor Star Delta (Y-D): -) Hydraulic – Motor with Inverter (VVF):	◀▶ (Choice)	Traction Hydraulic Dir Hydraulic S-S Hydraulic Y-D Hydraulic VVF	Traction
No. of floors	Number of floors of the installation	▲▼ (Increase/Decrease)	2 <-> 16 (std.) 2 <-> 32 (BDU only)	2

Parameter	Description	Navigation	Values	Default Value
Re-levelling	<p>Not present: No Re-levelling</p> <p>Type 1: (open or close door). This setting is indicated for traction installations for good stopping accuracy. Re-levelling is triggered when the elevator car leaves its position "perfectally at floor" that's to say when one of the two beams interrupted. Re-levelling ends when both beams are free. WARNING: this setting is not suitable for hydraulic installations due to the risk of "pumping" effect (elevator car drifts down after stopping)</p> <p>Type 2: (open or close door). This setting is indicated for hydraulic installations and operates as in Type 1, except that the two beams must be interrupted before the re-levelling starts. Re-levelling ends when the two beams are free. WARNING: the use of sensors with reduced distance between beams (TMS03 = 20 mm) is suggested.</p> <p>Type 3: Levelling 1 beam open door 2 beams closed door. This setting allows the levelling 1 beam, floor door open (elevator car light on) and levelling 2 beams, floor door closed (elevator car light off). WARNING: to operate the levelling door open, no matter which option you have chosen, it is necessary to shunt the door safety, using an approved system.</p> <p>Note: with the Encoder positioning system, distance of activation of the re-levelling is displayed</p>	◀▶ (Choice)	<p>Not present</p> <p>Type 1</p> <p>Type 2</p> <p>Type 3</p>	Not present
Main floor	Position of the main floor (all calls below this floor are served only upwards (only down collective)	▲▼ (Increase/Decrease)	0 <-> Floor No.	0
Low Speed fault time	Time before activation of the Low Speed fault (low speed too long)	▲▼ (Increase/Decrease)	7 s <-> 40 s	7 s
Running time	Time before activation of running time fault	▲▼ (Increase/Decrease)	20 s <-> 45 s	20 s
Type of Installation	Type of installation (Simplex / Multiplex)	◀▶ (Choice)	Simplex; Multiplex	Simplex
Multiplex configuration	Multiplex configuration: Lift No.(LN); Push-Buttons Line (PBL); Floors in multiplex; Offset. For description, refer to Annex I .	<p>◀▶ (Select parameter)</p> <p>▲▼ (Change value)</p>	<p>- Lift No (LN): 1<->4</p> <p>- PushButtons Line (PBL): 0(1 Line)<->3(4 Lines)</p>	<p>(LN).</p> <p>(PBL): 1.0</p>

Parameter	Description	Navigation	Values	Default Value
			- Floors: 2 <-> 16 [32] - Ofst 0 <-> N° floors	Flrs. : 2 Ofst : 0
Multiplex Call	In multiplex installations a floor call can be differentiated with a long push-button pressure (more than 3 seconds) calling: a) The installation with lower "Lift No (LN)" parameter (for example if there is a duplex installation with a big cabin for disabled passengers and a smaller one, the greater must be set as "1" and the other as "2"; b) In an "asymmetric floor distribution" system, the installation that can reach the lowest/highest level.	◀▶ (Choice)	No; Yes	No

“Doors” Menu





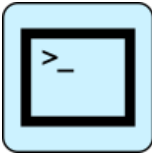
	----->>>>>		----->>>>>	
OR				
	----->>>>>		----->>>>>	Floor 0 - 12:30:56 < Doors >

Table of Parameters

Table of Parameters:

Parameter	Description	Navigation	Values	Default Value
Ret. ramp on	Time before activation of the retiring ramp	▲▼ (Increase/Decrease)	0,1 s <-> 9,9 s	0,1 s
Ret. ramp off	Time before deactivation of the retiring ramp	▲▼ (Increase/Decrease)	0,1 s <-> 9,9 s	0,1 s
Lock fault time	Time before the activation of the lock fault	▲▼ (Increase/Decrease)	2 s <-> 60 s	15 s
Door open delay	Time before door opening – for automatic door	▲▼ (Increase/Decrease)	0,1 s <-> 9,9 s	0,5 s
Parking time with open door	Lift car parking time with open door (in sec.)	▲▼ (Increase/Decrease)	1 s <-> 30 s	7 s

Parameter	Description	Navigation	Values	Default Value
Closing time with calls	Time (in sec.) before door closes in case of registered calls	▲ ▼ (Increase/Decrease)	1 s <-> 60 s	2 s
Doors Nb.	Number and type of doors	◀ ▶ (Selection)	-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) Manual / Not present: manual doors at floors, elevator car doors manual or not present; 2) Car independent: manual doors at floors, elevator car doors independent; 3) Car automatic: manual doors at floors, elevator car doors automatic; 4) Combined auto: automatic doors in the elevator car and at floors	◀ ▶ (Selection)	Manual / not present; Car Independent; Car automatic; Combined Auto	Combined Auto
Door A with limit switch	Presence of a limit switch for door A (not present for manual and independent doors)	◀ ▶ (Selection)	No; Yes	No
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)	◀ ▶ (Selection) ▲ ▼ (Change floor)	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
Slipping Door A	Door A with limit switch: time before slipping fault	▲ ▼ (Increase/Decrease)	1 s <-> 60 s	10 s
Door A powered	Door A powered during the run. Not considered for manual or independent doors	◀ ▶ (Selection)	No Yes Yes AT40	No
Type Door B	Selection of door type for entrance B (see Type Door A):	◀ ▶ (Selection)	Manual / not present; Car Independent; Car automatic; Combined Auto	Combined Auto
Door B with limit switch	Presence of a limit switch for door A (not present for manual and independent doors)	◀ ▶ (Selection)	No; Yes	No

Parameter	Description	Navigation	Values	Default Value
Select door B 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)	◀▶ (Selection) ▲▼ (Change floor)	No; Pkg. Door close; Pkg. Door open	Pkg. Door 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
Slipping Door B	Door B with limit switch: time before slipping fault	▲▼ (Increase/Decrease)	1 s <-> 60 s	10 s
Door B powered	Door B powered during the run. Not considered for manual or independent doors	◀▶ (Selection)	No Yes Yes AT40	No
Advanced opening	Parameter for door advanced opening (opening starts before car stop).	◀▶ (Selection)	No; Yes	No
Photocell Type	Parameter to select the type of photocell: NO photocell: contact opens if the beam is free. The contact closes if the beam is interrupted. The shock, photocell and open door contacts must be wired in parallel. NC photocell: opposite of the NO photocell. The shock, photocell and open door contacts must be wired in series. NOTE: The shock, photocell and open door contacts must all be of the same kind (NO or NC)	◀▶ (Selection)	NO; NC	No

“Signalisation” Menu





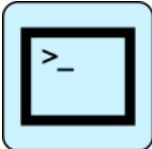
	----->>>>>		----->>>>>	
OR				
	----->>>>>		----->>>>>	Floor 0 - 12:30:56 < Signals >

Table of Parameters

Table of Parameters:

Parameter	Description	Navigation	Values	Default Value
-----------	-------------	------------	--------	---------------

Parameter	Description	Navigation	Values	Default Value
Car priority	Time of elevator 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	◀ ▶ (Selection)	Permanent; Blinking at floors	Permanent
AUX output	Selection of the output type on the 16 relays boards and for dynamic outputs on LOP: Type 0 = Car at floor and Out of Service Type 1 = Arrows Type 2 = Car at floor and Car is coming Type 3 = 3 Wire Display	◀ ▶ (Selection)	1 wire per floor; Car at floor; Floor light; Gray indicator; 9 segm. indicator; Lift is coming; 1 wire per floor HYD	1 wire per floor
Automatic floor designation	Automatic setting of numeric characters for serial position indicators. The value increases/decreases automatically at each floor starting from Lowest floor	▲ ▼ (Increase/Decrease)	-9 <-> 30	Lowest fl.: 0
Manual floor designation	Manual setting of alphanumeric characters for serial position indicators. Setting must be done for each floor	◀ ▶ (Selection) ▲ ▼ (Change value)	- ; 0 <-> 9 ; A <-> Z	
Trigger on PV	It is possible to start trigger (speech synthesiser / next direction arrows) on deceleration point (Yes) or to floor arrival (No).	◀ ▶ (Selection)	No yes	No
Next direction arrows	In case of parameter activation, arrow outputs are activated only when lift stops at floor (or on slowing down if trigger parameter on PV is active).	◀ ▶ (Choice)	No yes	No
LTMP Delay	This function handle the delay between a floor/car call and the light turning on. The output is deactivated XX seconds after the call has been served. 0 sec means no timer active (light ON)	▲ ▼ (Increase/Decrease)	0 s <-> 240 s	1 sec.
EME Delay	This function handles the delay between the black out signal (IEME) and output command (OEME) before system switch in automatic emergency procedure.	▲ ▼ (Increase/Decrease)	0 s <-> 30 s	0 sec.
Buzzer 81-21	For 81-21 installation: use the 81-20's acoustic buzzer (bypass door) on the top of car as acoustic alarm when protections are not in active position.	◀ ▶ (Choice)	No yes	No

“Special Features” Menu



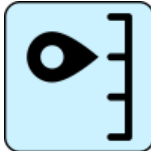


	----->>>>>		----->>>>>	
OR				
	----->>>>>		----->>>>>	Floor 0 - 12:30:56 < Special Features >

Table of Parameters

Table of Parameters:

Parameter	Description	Navigation	Values	Default Value
Reset in	Direction of travel during reset procedure	◀▶ (Selection)	2 s <-> 30 s	10 s
Travelling limits in inspection	Valid only for FAI/FAS positioning system. Settings for the travelling limits during inspection mode. If travelling is programmed beyond the limits, the controller does not allow any movement beyond top/bottom floors.	◀▶ (Selection)	Permanent; Blinking at floors	Permanent
Fire-fighters	(Refer to Annex XI - Fire operation programming procedure) Type of fire-fighter operations (if present) and relevant parameters (fire service access level and side, POM and CPOM key contact type); choice of relevant applicable norm: -) Norm NF P82-207 (France); -) EN 81-72 (a): no car FF key switch; -) EN 81-72 (b): with car FF key switch;	◀▶ (Select field) ▲▼ (Change value)	Not present; NF P82-207; EN 81-72 (a); EN 81-72 (b)	Not present
Fire detection	Parameter for fire detection at floors. When a fire is detected: - if the lift is at a different floor than the one where fire was detected, all registered calls from/to this floor are cancelled; - if the lift is at the floor where fire was detected, the controller blocks door opening, closes doors (if open upon fire detection) and sends the car to a safe floor	◀▶ (Selection)	No; Yes	No
Stop button registration	The system registers the out of service mode (pressure of STOP button). It is also possible to set the delay to avoid simultaneous movement in installations powered with a generator.	◀▶ (Selection)	No; Yes	No

Parameter	Description	Navigation	Values	Default Value
Temperature sensor during operation	Indicates whether the car can be blocked by the motor temperature sensor also during travel	◀▶ (Selection)	No; Yes	No
Anti- nuisance fault	Parameter for the detection of the anti-nuisance fault (number of stops without photocell activation after which all car calls are cancelled)	◀▶ (Selection) ▲▼ (No calls)	No; Yes 2 <-> 10	No 3
Out of service floor	Floor for out of service. Parking floor when HS input is enabled.	▲▼ (Increase/Decrease)	0 <-> Floor No.:	0
Automatic return	Parameters for elevator car automatic return at floor: Return floor and Minimum waiting time before automatic return	◀▶ (Select parameter) ▲▼ (Change value)	No 0 <-> Floor No.: 1 min <-> 60 min	No 0 15 min.
Return zones	Advanced settings for return at floor at planned hours / days: -) Day (0 = everyday, 1 = monday ... 7 = sunday); -) Selected time interval (4 interval each day); -) Return floor; -) Start time; -) End time (max time: 7h 45 min);	◀▶ (Select parameter) ▲▼ (Change value)		
R. zone timing	Timing for selected return zones	◀▶ (Selection) ▲▼ (Change value)	No; Yes 1 s <-> 120 s	No 60 s
Call erasing at floor	Erasing all calls at floor where the elevator car stops, with no control of the direction (only for full collective installations)	◀▶ (Selection)	No; Yes	No
Drift control (FR)	Drift control (France)	◀▶ (Selection)	None; Traction drive; Drum machine	None

Parameter	Description	Navigation	Values	Default Value
Push-button code	<p>It allows you to program a 4-digit code for elevator car calls. A 4-digit code may be assigned to each BCx elevator car button input, corresponding to the elevator car pushbutton inputs.</p> <p>Example: if the BC0 pushbutton is associated with the 0123 code, to reserv floor 0 from Cabin you can:</p> <p>a) keep pressed the floor 0 pushbutton for 3 seconds.</p> <p>b) All COP pushbutton will blink</p> <p>c) Press in sequence the pushbuttons corresponding to the BC0, BC1, BC2, BC3;</p> <p>Note: Enter a code between 0 and 9 corresponding to the inputs BC0 ÷ BC9</p> <p>Programming Code “0 “ will enable the special function Pent House</p>	<p>◀▶ (Select field)</p> <p>▲▼ (Change value)</p>		
Controle Temperature ambient	<p>Check the temperature in the engine room through the sensor (if present). If the temperature surpass the set thresholds for more than 30 seconds, the system stops at the floor and the error is recorded. The control is only active during normal operation or Cabin priority. After having set the two thresholds, pressing Enter you can perform the sensor calibration (immediately press Enter to retain the current calibration, otherwise set the room temperature value and then press Enter). The first threshold can be set between -10 ° C and +5 ° C while the second threshold can be set between +40 ° C and +75 ° C.</p>	<p>◀▶ (Select field)</p> <p>▲▼ (Change value)</p>	<p>Without; +5°C <=> +40°C</p>	Without
Automatic Calls	<p>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).</p> <p>The function ends automatically when the machineries are turned off or if the system is put in inspection mode.</p>	<p>▲▼ (Increase/Decrease)</p> <p>◀▶ (Select doors)</p>	<p>0 <-> 120 ∞</p> <p>Yes - No</p>	<p>0</p> <p>Yes</p>
Monitor UCM	<p>A3 amendment.</p> <p>Configure type of monitor.</p> <p>For description, refer to Annex VIII.</p>	<p>▲▼ (Increase/Decrease)</p> <p>◀▶ (Choice)</p>		
UCM	<p>Installation type 81-1 / 81-20 / 81-21</p> <p>Shaft access procedure and Protections.</p> <p>For description, refer to Annex IX.</p>	<p>▲▼ (Increase/Decrease)</p> <p>◀▶ (Choice)</p>		

Parameter	Description	Navigation	Values	Default Value
Forced Stop	If programmed, the installation will stop at a specific floor at each crossing (some hotels use this function).	▲▼ (Increase/Decrease ◀▶ (Choice)		
Protect floor	If a protected floor is programmed, when the elevator car reaches the floor, the door does not open, instead the monitor will show images coming from the camera corresponding to that floor. Doors can be opened only by pressing the OPEN DOOR button; if this does not happen, the lift moves to the previous floor and then stops the protected floor mode (this operating mode is only possible with DMG's monitoring system).	▲▼ (Increase/Decrease ◀▶ (Choice)		
Lop priority	Enabling the floor priority call function. pairing with 16 IN card (or key inputs from BDU)	▲▼ (Increase/Decrease ◀▶ (Choice)		
Floor habilitation	Enabling the call enabling function (e.g. CARD Reader). In combination with 16 IN card. Type 1: LOP enable: to enable calls, the corresponding input of the 16 IN card must be closed. Type 2: COP enabling To enable calls, the corresponding input of the 16 IN card must be closed Type 3: Enable COP + LOP: to enable calls, the corresponding input of the 16 IN card must be closed (disabling the floor)	▲▼ (Increase/Decrease ◀▶ (Choice)		
Shaft Protection	Protection of compartment and doors. For description, refer to Annex X .	▲▼ (Increase/Decrease		

“System Positioning” Menu



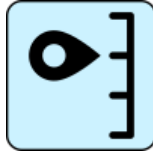

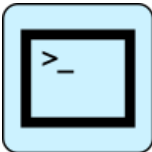
	----->>>>>		----->>>>>	
OR				
	----->>>>>		----->>>>>	Floor 0 - 12:30:56 < Positioning >

Table of Parameters

Table of Parameters: (FAI/FAS positioning system):

Parameter	Description	Navigation	Values	Default Value
Positioning system	Type of positioning system: with Encoder or traditional. Can only be modified in Temporary Oper. Mode Note: in case of absolute Encoder and shaft lengths longer than 65 meters change the resolution of Encoder = 2 in autsetting menu before starts the Manual teach procedure.	◀▶ (Selection)	FAI/FAS; Encoder Clockwise; Encoder Counter clockwise Absolute encoder	FAI/FAS
Top PV	Position of the deceleration (passage in Low Speed) and number of entrances	▲▼ (Increase/Decrease)	2 <-> 6	5
PV at floors	Position of the specific deceleration for each floor	◀▶ (Top PV) ▲▼ (Floor choice)	Short floor or 2<->6 0 <-> No. Floor	5 all floors
Short level delay	Time before short level deceleration (only if a short level is programmed)	▲▼ (Increase/Decrease)	0,00 s <-> 2,50 s	0,00s
Top PV 2 Delay	Delay before passage to Intermediate speed	▲▼ (Increase/Decrease)	0,00 s <-> 2,50 s	0,00s
Delay Dir.-BRK	VVVF: Delay between activation of travel direction and run command (BRK)	▲▼ (Increase/Decrease)	0,0 s <-> 3,0 s	0,5 s - VVVF 0,0 s - Others
	OLEO: Star / Delta delay	▲▼ (Increase/Decrease)	0,0 s <-> 3,0 s	0,5 s – VVVF 0,5 s – Star/Delta 0,0 s - Others
Delay BRK-S	Delay between activation of BRK command and speed command	▲▼ (Increase/Decrease)	0,0 s <-> 3,0 s	0,00 s
Delay BRK-Dir.	Delay between deactivation of run command and deactivation of travel direction (arrive al piano)	▲▼ (Increase/Decrease)	0,0 s <-> 3,0 s	1,5 s - VVVF 0,0 s - Others
Inspection speed	Sets the speed of travel in inspection	◀▶ (Selection)	Low speed; High speed	Low speed
Emergency BRK On	Emergency break modulation parameter (modify only if EME board is not present)	▲▼ (Increase/Decrease)	0,0 s <-> 5,0 s	0,0s
Emergency BRK Off	Emergency break modulation parameter (modify only if EME board is not present)	▲▼ (Increase/Decrease)	0,0 s <-> 5,0 s	0,0s

Table of Parameters: (Encoder positioning system):





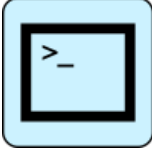
Parameter	Description	Navigation	Values	Default Value
Positioning system	Type of positioning system: with Encoder or traditional. Note: Can only be modified in Temporary Oper. mode	◀▶ (Selection)	Encoder Clockwise; Encoder Counter clockwise	Encoder Clockwise
Autosetting	Start of floor position self-learning procedure. Can only be modified in Temporary Operation mode.	◀▶ (Selection)	No; Yes	No
Floor Position	Position value for each floor	▲▼ (Increase/Decrease) ◀▶ (Selection)		
Accel. Time	Acceleration time. Time required to switch from start speed to travelling speed.	▲▼ (Increase/Decrease)	1,0 s <-> 5,0 s	3,0 s
Starting Boost	Starting speed	▲▼ (Increase/Decrease)	0 s <-> 10 s	3 %
Stopping Boost	Final (stopping) speed	▲▼ (Increase/Decrease)	0 s <-> 10 s	4 %
Max speed	Maximum speed during the travel	▲▼ (Increase/Decrease)	5 s <-> 100 s	100 %
Inspection speed	Travelling speed in inspection mode	▲▼ (Increase/Decrease)	5 s <-> 100 s	50 %
AGB/AGH speed	Travelling speed on AGB/AGH limit points. Same speed adopted during emergency operations	▲▼ (Increase/Decrease)	1 s <-> 15 s	10 %
Delay Dir.-BRK	VVVF: Delay between activation of travel direction and BRK command (start)	▲▼ (Increase/Decrease)	0,0 s <-> 3,0 s	0,5 s - VVVF 0,0 s - Others
	OLEO: Star / Delta delay	▲▼ (Increase/Decrease)	0,0 s <-> 3,0 s	0,5 s – VVVF 0,5 s – Star/Delta 0,0 s - Others
Delay BRK-S	Delay between activation of BRK command and beginning of the analogic speed ramp	▲▼ (Increase/Decrease)	0,0 s <-> 3,0 s	0,3 s - VVVF 0,0 s - Others
Delay BRK-Dir.	Delay between deactivation of run command and deactivation of travelling direction (stop at floor)	▲▼ (Increase/Decrease)	0,0 s <-> 3,0 s	1,5 s - VVVF 0,0 s - Others
Emergency BRK On	Emergency break modulation parameter	▲▼ (Increase/Decrease)	0,0 s <-> 5,0 s	0,0s
Emergency BRK Off	Emergency break modulation parameter	▲▼ (Increase/Decrease)	0,0 s <-> 5,0 s	0,0s

Parameter	Description	Navigation	Values	Default Value
Monitor Encoder	Contains information on: Encoder features, reading of slowdown heights (R1D / R1S), re-levelling (RRIPD / RRIPS) and stop of the cabin (RLD / RLS) where D indicates down while S means up; finally it contains info on reading AGB / AGH and ZP heights. Note: R1D and R1S heights can be modified pushing Enter without repeating self learning procedure (to let the slowing down distance be equal in rise and descent).			
Door Zone	Lenght of door zone ZP in mm			

NOTE: Please consult the time diagram at the end of this manual, to better understand some parameter meanings.

“VVVF” Menu

This menu is available only when a FUJI FRENIC LIFT VVVF is connected to a Control Lift Board.

	----->>>>>		----->>>>>	
OR				
	----->>>>>		----->>>>>	Floor 0 - 12:30:56 < VVVF >

⊖ VVVF Basic menu list Parameters

VVVF Basic menu list Parameters

Cod.	Parameter	Description	Navigation	Values	Default Value
F03	Maximum speed	Max speed of the motor	◀▶ (Selection) ▲▼ (Change value)	150-3600 RPM	1500 RPM
F05	Rated Voltage	Rated voltage of the motor driven by the inverter	◀▶ (Selection) ▲▼ (Change value)	160-500 V	380 V

Cod.	Parameter	Description	Navigation	Values	Default Value
F07	Acc T1	Acceleration ramp (Only with FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)	0,00-99,9 sec	1,8 sec (FAI/FAS) 0,01 sec (Encoder)
F08	Dec T2	Acceleration ramp (Only with FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)	0,00-99,9 sec	1,8 sec (FAI/FAS) 0,01 sec (Encoder)
F42	Control Mode	Control Mode	◀▶ (Selection) ▲▼ (Change value)	0-1-2	0 (Geared drives, closed loop) 1 (Gearless drives, closed loop) 2 (Geared drives, open loop)
E12	Acc/dec T5		◀▶ (Selection) ▲▼ (Change value)		1,8 sec (FAI/FAS) 0,0 sec (Encoder)
E13	Acc/dec T6		◀▶ (Selection) ▲▼ (Change value)		1,8 sec (FAI/FAS) 0,0 sec (Encoder)
E15	Acc/dec T8		◀▶ (Selection) ▲▼ (Change value)		1,8 sec (FAI/FAS) 0,0 sec (Encoder)
E16	Acc/dec T9		◀▶ (Selection) ▲▼ (Change value)	0.00 – 99.9 sec	1,8 sec (FAI/FAS) 0,0 sec (Encoder)
C07	Creep Speed	Creeping speed (Only with FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)		4,0 Hz
C10	Middle Speed	System speed under inspection mode (Only with FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)		20 Hz

Cod.	Parameter	Description	Navigation	Values	Default Value
C11	High Speed	High speed for multistep speed change (Only with FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)		50 Hz
P01	Motor Poles	Number of poles of the motor	◀▶ (Selection) ▲▼ (Change value)		4 (see motor data)
P02	Motor Rated Cap	Rated power of the motor	◀▶ (Selection) ▲▼ (Change value)		Function of Inverter size (see motor data)
P03	Motor Rated Cur	Rated current intensity of the motor	◀▶ (Selection) ▲▼ (Change value)		Function of Inverter size (see motor data)
P04	Motor Autotuning	Auto tuning of motor parameters (geared drives only)	◀▶ (Selection) ▲▼ (Change value)		0 (2 to trigger the auto tuning procedure for geared drives)
P06	M-No-Load Curr.	Motor no-load current	◀▶ (Selection) ▲▼ (Change value)		Automatically set during Auto tuning
P12	M-Rated Slip	Rated slip frequency of the motor	◀▶ (Selection) ▲▼ (Change value)	0- 15Hz	Automatically set
L01	PG select	See Annex IV	◀▶ (Selection) ▲▼ (Change value)	0-5	0 Geared drives 4 Gearless drives
L02	PG resolution	Resolution of the pulse encoder (Pulse/ Turn)	◀▶ (Selection) ▲▼ (Change value)	360- 60000 P/R	1024 Geared drives 2048 Gearless drives

Cod.	Parameter	Description	Navigation	Values	Default Value
L19	S-Curve 1	S-Curve – 1	◀▶ (Selection) ▲▼ (Change value)		30 % (FAI/FAS) 20 % (Encoder)
L24	S-Curve 6	S-Curve – 6	◀▶ (Selection) ▲▼ (Change value)		25 % (FAI/FAS) 20 % (Encoder)
L25	S-Curve 7	S-Curve – 7	◀▶ (Selection) ▲▼ (Change value)		30 % (FAI/FAS) 20 % (Encoder)
L26	S-Curve 8	S-Curve – 8	◀▶ (Selection) ▲▼ (Change value)		25 % (FAI/FAS) 20 % (Encoder)
L27	S-Curve 9	S-Curve – 9	◀▶ (Selection) ▲▼ (Change value)		30 % (FAI/FAS) 20 % (Encoder)
L82	Brake On Delay	Delay from activation of BRKS output	◀▶ (Selection) ▲▼ (Change value)	0,00-10,00 Sec	0,1 (FAI/FAS) 0,3 (Encoder)
L83	Brake Off delay	Delay from deactivation of BRKS output	◀▶ (Selection) ▲▼ (Change value)	0,00-10,00 Sec	0,4 (FAI/FAS) 0,1 (Encoder)

VVVF Advanced menu list Parameters (first part)

VVVF Advanced menu list Parameters (first part)

Cod.	Parameter	Description	Navigation	Values	Default Value
F01	Speed command	Command selection for speed variation	◀▶ (Selection) ▲▼ (Change value)	0=MULTISPEED 1=NR Analogic (no polarized) no available	0 (with FAI/FAS positioning system) 1 (with Encoder)

Cod.	Parameter	Description	Navigation	Values	Default Value
F03	Maximum speed	Max speed of the motor	◀▶ (Selection) ▲▼ (Change value)	150-3600 RPM	1500 RPM
F04	Rated speed	Rated speed of the motor (Frequency)	◀▶ (Selection) ▲▼ (Change value)		50 Hz
F05	Rated Voltage	Rated voltage of the motor driven by the inverter	◀▶ (Selection) ▲▼ (Change value)	160-500 V	380 V
F07	Acc T1	Acceleration ramp (only with FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)	0,00-99,9 sec	1,8 sec (FAI/FAS) 0,01 sec (Encoder)
F08	Dec T2	Deceleration ramp (only with FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)	0,00-99,9 sec	1,8 sec (FAI/FAS) 0,01 sec (Encoder)
F09	TRQ Boost	Torque increase	◀▶ (Selection) ▲▼ (Change value)	0,0-5,0	0,0
F10	Electronic OL	Overload electrical protection	◀▶ (Selection) ▲▼ (Change value)	1 - 2	2
F11	Overload Level	Electronic Thermal Overload Protection for Motor (Value in Ampere equal to the inverter size)	◀▶ (Selection) ▲▼ (Change value)	1 to 200% of the rated current	100 % of the rated current
F12	Overload time	Thermic time constant	◀▶ (Selection) ▲▼ (Change value)	0.5 – 75.0 min.	5.0 (up to 22 kW) 10.0 (up to 30 kW)

Cod.	Parameter	Description	Navigation	Values	Default Value
F20	DC Brake speed	Frequency threshold for DC INJECTION	◀▶ (Selection) ▲▼ (Change value)		1,0 Hz
F21	DC Brake level	Intensity threshold for DC INJECTION	◀▶ (Selection) ▲▼ (Change value)		45 %
F22	DC Brake T	DC INJECTION time	◀▶ (Selection) ▲▼ (Change value)		0,8 sec
F23	Starting Speed	Starting speed (in Hz) for the inverter	◀▶ (Selection) ▲▼ (Change value)	0,00-150	0,5 Hz (FAI/FAS) 0,1 Hz (Encoder)
F24	Holding Time	Holding time of running at starting speed for the inverter	◀▶ (Selection) ▲▼ (Change value)	0,00-10 Sec	0,0 sec (FAI/FAS) 0,3 sec (Encoder)
F25	Stopping Speed	Stopping speed (in Hz) for the inverter	◀▶ (Selection) ▲▼ (Change value)		0,0 Hz (FAI/FAS) 0,1 Hz (Encoder)
F26	Motor Sound	Carrier frequency	◀▶ (Selection) ▲▼ (Change value)		15 KHz
F42	Control Mode	Control Mode	◀▶ (Selection) ▲▼ (Change value)	0-1-2	0 (Geared drives, closed loop) 1 (Gearless drives, closed loop) 2 (Geared drives, open loop)

Cod.	Parameter	Description	Navigation	Values	Default Value
F44	Current Limiter	Activation level of the current limiter. If 999, value means no current limitation	◀▶ (Selection) ▲▼ (Change value)	% to the rated current of the inverter	200 %
E04	Command X4	Input X4 not used	◀▶ (Selection) ▲▼ (Change value)		8
E05	Command X5	Input X5 not used	◀▶ (Selection) ▲▼ (Change value)		60
E06	Command X6	Input X6 not used	◀▶ (Selection) ▲▼ (Change value)		61
E07	Command X7	Input X7 not used	◀▶ (Selection) ▲▼ (Change value)		62
E08	Command X8	Input X8 not used	◀▶ (Selection) ▲▼ (Change value)		63
E10	Acc/dec T3		◀▶ (Selection) ▲▼ (Change value)		1,8 sec (FAI/FAS) 0,0 sec (Encoder)
E11	Acc/dec T4		◀▶ (Selection) ▲▼ (Change value)		1,8 sec (FAI/FAS) 0,0 sec (Encoder)
E12	Acc/dec T5		◀▶ (Selection) ▲▼ (Change value)		1,8 sec (FAI/FAS) 0,0 sec (Encoder)

Cod.	Parameter	Description	Navigation	Values	Default Value
E13	Acc/dec T6		◀▶ (Selection) ▲▼ (Change value)		1,8 sec (FAI/FAS) 0,0 sec (Encoder)
E14	Acc/dec T7		◀▶ (Selection) ▲▼ (Change value)		1,8 sec (FAI/FAS) 0,0 sec (Encoder)
E15	Acc/dec T8		◀▶ (Selection) ▲▼ (Change value)		1,8 sec (FAI/FAS) 0,0 sec (Encoder)
E16	Acc/dec T9				1,8 sec (FAI/FAS) 0,0 sec (Encoder)
E20	Signal Y1	Output Y1 (transistor) not used	◀▶ (Selection) ▲▼ (Change value)		10
E21	Signal Y2	Output Y2 (transistor) not used	◀▶ (Selection) ▲▼ (Change value)		25
E22	Signal Y3	Output Y3 (transistor) not used	◀▶ (Selection) ▲▼ (Change value)		2
E23	Signal Y4	Output Y4 (transistor) not used	◀▶ (Selection) ▲▼ (Change value)		57
E30	Speed Arr. Hyst	Not used	◀▶ (Selection) ▲▼ (Change value)		0,5

Cod.	Parameter	Description	Navigation	Values	Default Value
E31	Speed Det.Lev	Not used	◀▶ (Selection) ▲▼ (Change value)		50,00
E32	Speed Det Hyst	Not used	◀▶ (Selection) ▲▼ (Change value)		0,51
E39	RRD Level	Recommended direction in emergency (Not used)	◀▶ (Selection) ▲▼ (Change value)		0%
E61	Analog Input 12	Function of analog input 12	◀▶ (Selection) ▲▼ (Change value)	0-2	0 sec (FAI/FAS) 2 sec (Encoder)
E98	Command FWD	Function for screw terminal FWD	◀▶ (Selection) ▲▼ (Change value)		98
E99	Command REV	Function for screw terminal REV	◀▶ (Selection) ▲▼ (Change value)		99

VVVF Advanced menu list Parameters (second part)

VVVF Advanced menu list Parameters (second part)

Cod.	Parameter	Description	Navigation	Values	Default Value
C01	BATRY TL I	Torque limitation in emergency (999 value means that the limit is like F44)	◀▶ (Selection) ▲▼ (Change value)		999
C02	BATRY TL T		◀▶ (Selection) ▲▼ (Change value)		0 Sec

Cod.	Parameter	Description	Navigation	Values	Default Value
C03	Battery Speed	Speed during emergency run	◀▶ (Selection) ▲▼ (Change value)		
C07	Creep Speed	Creeping speed (only with FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)		
C10	Middle Speed	System speed under inspection mode (only with FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)		
C11	High Speed	High speed for multistep speed change (FAI/FAS positioning system)	◀▶ (Selection) ▲▼ (Change value)		
P01	Motor Poles	Number of poles of the motor	◀▶ (Selection) ▲▼ (Change value)		
P02	Motor Rated Cap	Rated power of the motor	◀▶ (Selection) ▲▼ (Change value)		
P03	Motor Rated Cur	Rated current intensity of the motor	◀▶ (Selection) ▲▼ (Change value)		
P04	Motor Autotuning	Auto tuning of motor parameters (geared drives only)	◀▶ (Selection) ▲▼ (Change value)		
P06	M-No-Load Curr.	Motor no-load current	◀▶ (Selection) ▲▼ (Change value)		

Cod.	Parameter	Description	Navigation	Values	Default Value
P07	M-%R1	Motor (%R1)	◀▶ (Selection) ▲▼ (Change value)		
P08	M-%X	Motor (%X)	◀▶ (Selection) ▲▼ (Change value)		
P09	M-Slip driving	Slip compensation gain in percentage to the rated slip (P12) at the driving sides			
P10	M-Slip braking	Slip compensation gain in percentage to the rated slip (P12) at the braking sides	◀▶ (Selection) ▲▼ (Change value)		
P11	M-Slip T	Slip compensation time value (fixed)	◀▶ (Selection) ▲▼ (Change value)		
P12	M-Rated Slip	Rated slip frequency of the motor	◀▶ (Selection) ▲▼ (Change value)		
H04	Auto reset Times	Auto-resetting (Number of times)	◀▶ (Selection) ▲▼ (Change value)		
H05	Auto reset int	Auto-resetting (Reset interval)	◀▶ (Selection) ▲▼ (Change value)		
H06	Cooling Fan CTRL	Delay on Cooling Fan turning off (999 value means that there is no limit on fan control; fan is always turned on)	◀▶ (Selection) ▲▼ (Change value)		
H57	S-Curve 11	Curve to S-11	◀▶ (Selection) ▲▼ (Change value)		

Cod.	Parameter	Description	Navigation	Values	Default Value
H58	S-Curve 12	Curve to S-12	◀▶ (Selection) ▲▼ (Change value)		
H64	Zero Hold Time		◀▶ (Selection) ▲▼ (Change value)		
H65	Soft Start Time		◀▶ (Selection) ▲▼ (Change value)		
H67	Stop Hold Time		◀▶ (Selection) ▲▼ (Change value)		
H96	Brake Monitor	Enable Brake monitor	◀▶ (Selection) ▲▼ (Change value)		
H190	Motor UVW order	Sequenza fasi uscita motore	◀▶ (Selection) ▲▼ (Change value)		

VVVF Advanced menu list Parameters (third part)

VVVF Advanced menu list Parameters (third part)

Cod.	Parameter	Description	Navigation	Values	Default Value
L01	PG select	See annex IV	◀▶ (Selection) ▲▼ (Change value)	0-5	0 Geared drives 4 Gearless drives
L02	PG resolution	Resolution of the pulse encoder (Pulse/ Turn)	◀▶ (Selection) ▲▼ (Change value)	360-60000 P/R	1024 Geared drives 2048 Gearless drives

Cod.	Parameter	Description	Navigation	Values	Default Value
L03	P.P.Tuning	See annex IV	◀▶ (Selection) ▲▼ (Change value)		
L04	P.P.Offset	Magnetic Pole Position Offset (Offset angle) for gearless drives	◀▶ (Selection) ▲▼ (Change value)		Automatically set during Auto tuning (L03)
L05	ACR P gain		◀▶ (Selection) ▲▼ (Change value)		1,5
L19	S-Curve 1	L19 to L28 specify S-curve zones to be applied to operations driven by multistep speed commands with S-curve acceleration/deceleration.	◀▶ (Selection) ▲▼ (Change value)		30 % (FAI/FAS) 20 % (Encoder)
L20	S-Curve2				30 % (FAI/FAS) 20 % (Encoder)
L21	S-Curve 3				30 % (FAI/FAS) 20 % (Encoder)
L22	S-Curve 4				30 % (FAI/FAS) 20 % (Encoder)
L23	S-Curve 5				30 % (FAI/FAS) 20 % (Encoder)
L24	S-Curve 6				25 % (FAI/FAS) 20 % (Encoder)
L25	S-Curve 7				30 % (FAI/FAS) 20 % (Encoder)
L26	S-Curve 8				25 % (FAI/FAS) 20 % (Encoder)

Cod.	Parameter	Description	Navigation	Values	Default Value
L27	S-Curve 9				30 % (FAI/FAS) 20 % (Encoder)
L28	S-Curve 10				30 % (FAI/FAS) 20 % (Encoder)
L29	SFO Hold T	Short Floor Operation (Holding time) – NOT USED	◀▶ (Selection) ▲▼ (Change value)		0,00 sec
L30	SFO Speed	Short Floor Operation (Allowable speed) – NOT USED	◀▶ (Selection) ▲▼ (Change value)		0,00 sec
L36	ASR P Gain High	See annex V	◀▶ (Selection) ▲▼ (Change value)		30 (FAI/FAS) 10 (Encoder)
L37	ASR I Gain High	See annex V	◀▶ (Selection) ▲▼ (Change value)		0,1 (FAI/FAS) 0,1 (Encoder)
L38	ASR P Gain Low	See annex V	◀▶ (Selection) ▲▼ (Change value)		40 (FAI/FAS) 30 (Encoder)
L39	ASR I Gain Low	See annex V	◀▶ (Selection) ▲▼ (Change value)		0,09 (FAI/FAS) 0,1 (Encoder)
L40	Switch Speed 1	Not used	◀▶ (Selection) ▲▼ (Change value)		5 (FAI/FAS) 5 (Encoder)


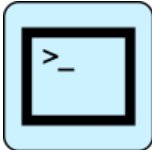
Cod.	Parameter	Description	Navigation	Values	Default Value
L41	Switch Speed 2	Not used	◀▶ (Selection) ▲▼ (Change value)		10 (FAI/FAS) 10 (Encoder)
L42	ASR-FF Gain		◀▶ (Selection) ▲▼ (Change value)	0.000 – 10.000 sec	0.000 sec
L55	TB Start time		◀▶ (Selection) ▲▼ (Change value)	0.00 – 1.00 sec	0.20 sec
L56	TB End time		◀▶ (Selection) ▲▼ (Change value)	0.00 – 20.00 sec	0.20 sec
L64	TB Digital 3		◀▶ (Selection) ▲▼ (Change value)	-200 - +200 %	0 %
L65	ULC operation	Unbalanced load Compensation	◀▶ (Selection) ▲▼ (Change value)	0-1	0 (FAI/FAS) 0 (Encoder)
L66	ULC activation	Unbalanced load compensation (Activation time)	◀▶ (Selection) ▲▼ (Change value)	0,01-2 Sec	0,5 (FAI/FAS) 0,5 (Encoder)
L68	ULC ASR P gain	See annex V	◀▶ (Selection) ▲▼ (Change value)		10 (FAI/FAS) 10 (Encoder)
L69	ULC ASR I gain	See annex V	◀▶ (Selection) ▲▼ (Change value)		0,01 (FAI/FAS) 0,01 (Encoder)

Cod.	Parameter	Description	Navigation	Values	Default Value
L73	APR P gain zero	See annex V	◀▶ (Selection) ▲▼ (Change value)		0 (FAI/FAS) 0 (Encoder)
L74	APR D Gain		◀▶ (Selection) ▲▼ (Change value)		0.0
L75	Filter Time		◀▶ (Selection) ▲▼ (Change value)		0.000 sec
L76	ACR P constant		◀▶ (Selection) ▲▼ (Change value)		0.00
L80	Brake mode	Brake Control (BRKS) output mode	◀▶ (Selection) ▲▼ (Change value)	1-2	2
L81	Brake On Level	Output current that turns the BRKS signal ON when L80 = 2.	◀▶ (Selection) ▲▼ (Change value)	0,-200% of motor no-load current	30 %
L82	Brake On Delay	Delay from activation of BRKS output	◀▶ (Selection) ▲▼ (Change value)	0,00-10,00 Sec	0,1 (FAI/FAS) 0,3 (Encoder)
L83	Brake Off delay	Delay from deactivation of BRKS output	◀▶ (Selection) ▲▼ (Change value)	0,00-100 Sec	0,4 (FAI/FAS) 0,1 (Encoder)
L84	BRKS check t	Allowable time between BRKS output and BRKE input (Er6)	◀▶ (Selection) ▲▼ (Change value)	0,00-10 sec	0,0 sec

Cod.	Parameter	Description	Navigation	Values	Default Value
L99	ACTION SEL	Not used	◀▶ (Selection) ▲▼ (Change value)		0

“Rec Parameters” Menu

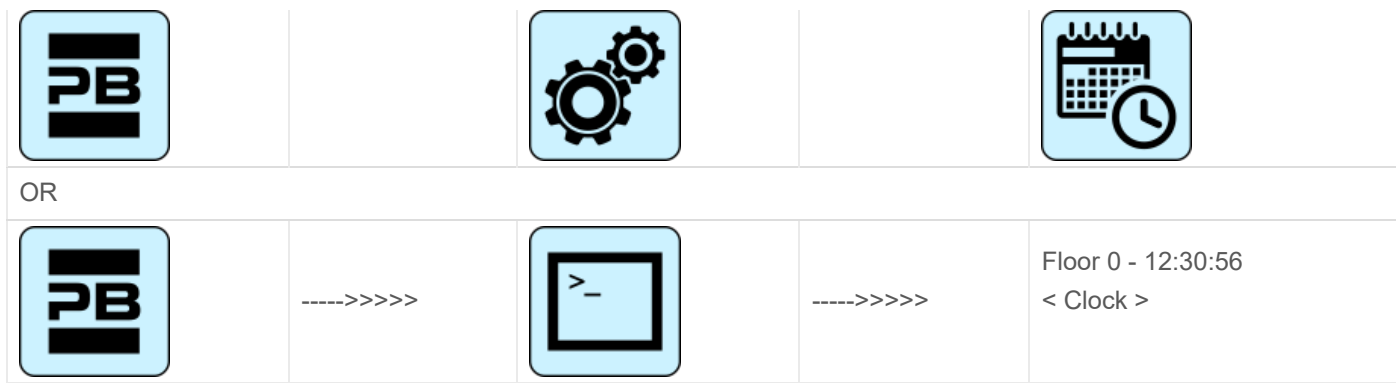
Note: data saving is not required only for emulation of PBV3 controllers.

	----->>>>>		----->>>>>	Floor 0 - 12:30:56 < Rec Parameters >
---	------------	---	------------	--

Reference table				
Floor 0 12:30:56 < Rec Parameters >	----- ENTER -----	Floor 0 12:30:56 < Rec Parameters > Save Parameters	----- ENTER ----- <----- ESC -----	Floor 0 12:30:56 < Rec Parameters > Save Parameters Are you sure ?
		▲ ▼		ENTER ↓
				Floor 0 12:30:56 < Rec Parameters > Save Parameters End reg.
		Floor 0Floor 0 12:30:56 < Rec Parameters > Reset Parameters	----- ENTER ----- <----- ESC -----	Floor 0Floor 0 12:30:56 < Rec Parameters > Reset Parameters Are you sure ?
				ENTER ↓
				Floor 0Floor 0 12:30:56 < Rec Parameters > Reset Parameters End reg.

“Clock” Menu

	----->>>>>		----->>>>>	
--	------------	--	------------	--



- Da = Day
- Mo = Month
- Yr = Year
- D = Weekday (1=Mon)
- Hr = Hours
- Mn = Minutes






WARNING: In case of system shutdown, the time is saved by means of a Super Capacitor (for up to 5 days without power supply).

Troubleshooting

– Troubleshooting (first part)

N.	Fault	Type	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 and CCOB remain open after the car stop. Cod. 0 CCO open Cod. 1 CCOB open Cod. 2 CCO+CCOB open	Check: 1- the series of auxiliary contacts (NC) of the power contactors and other cables in series on the circuit CCO and CCOB 2- the CCO and CCOB circuit wiring 3- the connection of the CCO and CCOB on the board

N.	Fault	Type	Description	Remedy
3	Low speed too long		Car moving at low speed for too long. In case of VVVF may be too low engine torque in the approaching floor phase.	Check: 1- Check parameter "Low Speed fault time" (§ 5.5) and increase time if necessary 2- the elevator speed to a low speed (in the case of VVVF); increase it if necessary 3a- the decelerating distance to the plane indicated (magnets / flags FAI / FAS) 3B- value of the distance R1D / R1S if Encoder is used (§ 5.9)
4	Overload		Overload input (SUR) activated (NO contact)	Check 1- the SUR input (if locked) and wiring 2- the setting of the load weighing device
5	Positioning fault		This error shows a difference between the performed theoretical counting and the real position detected: FAI/FAS: at the activation of the AGB/AGH limit contacts; ENCODER: at the activation of the AGB/AGH limit contacts (cod 0) and at the activation of ZP magnet floor (cod 100) or stop level's ZP magnet floor (cod 200)	Check: 1- the correct positioning of the magnets (or flags) 2- operation of magnetic reeds, optical detector or encoder; verify the arrival of 24V current 3- the distance between extreme contact and magnet (or flag)
6	Direction fault		The controller detects the wrong direction of travel	Check: 1- the direction of travel of the engine (control UP vs. Car movement direction) 2- the installation and connection of FAI / FAS sensors 3- CW / CCW Encoder configuration (§ 5.9) 4- AGH and AGB inputs
7	Safety 3 open at stop		Safety chain interrupted with elevator not running. Calls are deleted. On the PlayPad Led SE3 is off.	Check all contacts between the terminals SC2 and SE3 (Safety Gear, Limit switch, Overspeed Governor).
9	Door lock fault		Safety chain open at point SE6 when a call is registered With automatic door: door re-opens and then closes (3 times, after which all calls are cancelled). Other door types: after a few seconds all calls are cancelled Cod 5: floor locks Cod 6: car door	Check all contacts between the terminals SD2 and SD3 (floor locks) or SC4 and SC5 (car doors) according cod info, their connection and if an object obstructs the closing of the door to the indicated floor (POS). In case of 81-21 devices check its contacts in Normal mode operations.

N.	Fault	Type	Description	Remedy
10	Door A opening slippage		Only doors with limit switch: door does not open within the planned time. In case of slippage during door opening, the door is considered open	Check: 1- Door open limit switch (FOA) and its wiring; 2- door operator power supply and fuses; 3- door open contactors (ROA)
11	Door B opening slippage		Same as door A, for second entrance	Same as A, but signals (FOB) and (ROB).
12	Safety chain open before Input SE3 while car travelling. Car stops and car calls are cancelled. On the PlayPad Led SE3 is off.		Safety chain open before Input SE3 while car travelling. Car stops and car calls are cancelled. On the PlayPad Led SE3 is off.	Check all contacts between the terminals S35-S36 (Top of Car) SC3-SM4 (controller) Safety devices: Safety Gear, Limit switch, Overspeed Governor.
13	Motor temperature sensor		Inputs TH1 or TH2 of motor temperature is activated (NC contact) Cod 1: TH1 open Cod 2: TH2 open Cod 3: TH1 and TH2 open	Check inputs (TH1, TH2), sensor connections and the state of the motor's temperature sensor.
14	Parameters memory		Fault in the Eprom parameters memory	Reset, re-enter and record all parameters
15	Final limit switch		When it is reached the final limit switch (or Safety Gear or Overspeed Governor limiter trip), the input SE3 is active (NC contact). After delay of 1,5 s the error remains in memory, even after deactivation of the signal, and inhibits the landing calls and the car movements, until special reset Menu "Errors" is made (Reset SE3).	1- Release the final limit switch (or Safety Gear or OSG) closing the safety chain (SE3) and cancel fault in the "Error" Menu (§ 5.3). 2- Check the connection of the NC contact between SC2 and SE3 terminals
16	Fire detection.		In case of fire sensors installed, this fault indicates that one or more sensors are active	Check fire sensor input(s)
17	Safety 4 open during travel		Safety chain open before input SE4 while car travelling. Landing calls and the car movements are cancelled On the PlayPad Led SE4 is off.	Check all contacts between the terminals SD1 and SD2 (Preliminaries floor doors).



N.	Fault	Type	Description	Remedy
18	Safety 6 open during travel		<p>Safety chain open before Input SE6 while car travelling. landing calls and the car movements are cancelled On the PlayPad Led SE6 is off.</p> <p>Cod 5: floor locks Cod 6: car door</p>	<p>Check all contacts between the terminals SD2 and SD3 (floor locks).</p> <p>Check all contacts between the terminals SC4 and SC5 (car door).</p> <p>Check all contacts between the terminals SC5 and SE6 (Protection device 81-21).</p>
19	Low tension during movement		<p>Motherboard power below 17V (this fault disappears when the 24V is restored)</p> <p>Cod 0: Main power Input Cod 1: Overcurrent on VCAB Cod 2: Overcurrent on VMR Cod 3: Short Circuit on VCAB Cod 4: Short Circuit on VMR</p>	<p>Check the network, the supply voltage to the transformer primary, the presence of 24V and the consumption of the circuit.</p>
20	Travel interrupted		<p>During upward (or downward) movements contactors open while RMO (or RDE) commands are active. Possible short interruption of the safety circuit while moving.</p> <p>Cod 100: CCO signal falling during travel Cod 200: CCOB signal falling during travel</p>	<p>Check:</p> <p>1- Preliminary contacts and door lockers at the indicated floor 2- car door contacts 3- the supply voltage of the safety circuit</p>




This symbol means a blocking fault: switch off main power and then switch it on again to put the lift back in service.

Troubleshooting (second part)

N.	Fault	Type	Description	Remedy
21	CCO input blocked		<p>The contactors control circuit (Input CCO) remains closed after travel command is given</p> <p>Cod. 100 CCO Cod. 200 CCOB Cod. 250 CTB not activated</p>	<p>check:</p> <p>1- wiring and state of the auxiliary contacts (NC) of the power contactors and other NC contacts wired in series on the CCO / CCOB circuit 2- CCO / CCOB Motherboard input</p>
22	Low tension at stop		Same as Fault N.19	<p>Check the network, the supply voltage to the transformer primary, the presence of 24V and the consumption of the circuit.</p>

N.	Fault	Type	Description	Remedy
23	AGB blocked		<p>The expected operation of AGB (NC) contact is not checked.</p> <p>Cod 100: contact is not closed at floor different from bottom floor (downward calls erased).</p> <p>Cod 200: contact is not open at lowest floor (lift locked)</p>	<p>Check the condition of the contact AGB (mechanical switch or magnetic sensor) and the AGB circuit wiring</p>
24	AGH blocked		<p>The expected operation of AGH (NC) contact is not checked.</p> <p>Cod 100: contact is not closed at floor different from top floor (upward calls erased).</p> <p>Cod 200: contact is not open at top floor (lift locked)</p>	<p>As for the error 23, regarding the AGH input</p>
25	AGH and AGB simultaneously		<p>Inputs AGB / AGH opened simultaneously. The system shuts down.</p>	<p>Check the condition of AGH and AGB contacts (mechanical or magnetic) and their wiring. When one of the two contacts is closed, the system performs a reset manoeuvre.</p>
26	Running time UP		<p>No change in the beam status for motion sensors (or floor) for more than planned during car travel. In case of encodeur the threshold is 1 sec. over AGB/AGH limit point</p> <p>Cod 0: problem on FAI FAS input (no changing of inputs for time longer than "Running time" parameter)</p> <p>Cod 100: problem on encoder channel</p> <p>Cod 200: no changing of ZP input for time longer than "Running time" parameter</p>	<p>Check contactors, brake, motor power supply, FAI/FAS sensors (or ENCODER). Check "X1" and "12" inputs of the VVVF. Anti-slippage test: See Annex 2 – Test and measures</p>
27	Running time DOWN		<p>See above but in downward movement</p>	<p>See above but in downward movement</p>
28	Door A closing slippage		<p>Only doors with limit switch: Door A does not close within programmed time.</p> <p>3 complete opening/closing cycles are performed, then all registered calls are cancelled</p>	<p>Check:</p> <ol style="list-style-type: none"> 1- door close limit switch FFA (NC contact) and wiring 2- door motor power supply and fuses 3- door close contactors (RFA)
29	Door B closing slippage		<p>Same as door A, for second entrance</p>	<p>Same as door A, but signals (FFB) and (RFB)</p>
30	Out of service switch		<p>If the relevant parameter has been programmed, it indicates that the system has been put out of service through the activation of input HS</p>	<p>Check input HS (NO contact)</p>

N.	Fault	Type	Description	Remedy
31	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		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 and magnets position.
32	Temporary op. without insp.		During temporary operations the input REV or REV1 or REV2 must be active or the lift will not move.	Check input REV, REV1 or REV2 (NC contact)
33	Stopping accuracy		When the lift stops at floor, the two FAI/FAS LEDs are on. If within 2 seconds from the stop one of the beams is interrupted, this fault occurs. If the system is equipped with ENCODER the uncertainty of the stop is more than 2 cm.	Check: 1- position of the magnets (or flags); 2- deceleration distances; 3- motor brake
34	Anti- nuisance		It appears after a call cancellation and if the parameter "Anti- nuisance" has been programmed. The reason is too many calls from the car without the cell being cut (in case of combined doors) or without landing doors opening (other door types)	Change number of unwanted calls in the Anti- nuisance parameter
35	Lift not available		The lift cannot take calls and is not considered for call dispatching (in multiplex). After 3 closing door cycles, the lift is considered unavailable for 1 minute. Cod 10: No power on Car light Only in multiplex: Cod 100: light curtain / door open button Cod 200: no SE4 signal (eg manual door not closed)	
36	Phase sequence		Wrong sequence in input phases. Could be detected even during system shutdown	Check the right sequence of phases or swap two phases on power input terminals L1-L2-L3
37	Low battery		Low charge on 24V battery	Test battery charge or change battery


N.	Fault	Type	Description	Remedy
38	SE2 open		<p>Safety chain open. Landing calls and the car movements are cancelled. Playpad SE2 led is off.</p> <p>Cod 0: DIS switch open (SE0 led off)</p> <p>Cod 1: PIT safety circuit open (SE1 led off)</p> <p>Cod 2 : TOC safety circuit open (SE2 led off).</p>	<p>Check DIS Switch</p> <p>Check all contacts between the terminals SP3 and SP4 (STOP in the pit, pit ladder, Inspection box, etc.).</p> <p>Check all contacts between the terminals SC1 and SC2 (STOP on the Toc, Toc protection, Inspection box, etc).</p>
39	Ambient temperature		<p>This error indicates that the ambient temperature detected by the sensor is outside the set limits. Temperature below the lower threshold (code 100); temperatures above the higher threshold (code 200).</p>	<p>1 - Check the presence and connection of the temperature sensor.</p> <p>2- Control activation, the threshold adjustment and sensor calibration can be made in the Special Features menu.</p>
40	Fault RSP		<p>For reduced pit and headroom.</p> <p>Cod. 20: pit access according EN81.20</p> <p>Cod. 21 shaft access according EN81.21</p> <p>Cod 111: Monitor Relay RSDC fail (contact doesn't open)</p> <p>Cod. 121: reset circuit bi stable contact EN81.21 (automatic reset)</p> <p>Cod 131: Bistabile circuit (relay RSR1)</p> <p>Cod 132: Bistabile circuit (relay RSR2)</p>	<p>Clear RSP parameter in the menu Faults (§ 5.3)</p> <p>Cod 111 check right working of relay RSDC</p> <p>Cod. 121: check reset circuit. It could be possible automatic reset of bi stable contacts caused by problem on reset circuit. The contact series must be open and then make a standard reset.</p> <p>Cod 131 (132) check right working of relsy RSR1 (RSR2) and after make the Reset procedure.</p>





This symbol means a blocking fault: switch off main power and then switch it on again to put the lift back in service.


Troubleshooting (third part)

N.	Fault	Type	Description	Remedy
----	-------	------	-------------	--------

N.	Fault	Type	Description	Remedy
41	Fault ISO		<p>Problem detected in the operation monitoring of safety module for advanced door opening / re-leveling. If activated, the installation goes into "out of service" mode at the top floor (electric) or bottom floor (hydro).</p> <p>Cod 100: fail on Safety module monitor during travel Cod 200: fail on Safety module monitor at level</p>	<p>Check the alignment of ISO1 and ISO2.</p> <p>Reset ISO in the menu Faults (§ 5.3).</p>
42	TOC Communication		No serial link between controller and car (in case of car serial link system configuration)	Check CAN link between controller and top of car board
43	Inspection		<p>The system is in Inspection mode (NORM/ISP switch set to Inspection)</p> <p>EN 81.1/2 Cod 1: REV input open (STD Version) Cod 2: TOC's REV1 input open Cod 3: REV + TOC's REV1 input open Cod 5: REV input open (Pitagora version) Cod 6: REV1 input open Cod 7: REV + TOC's REV1 input open</p> <p>EN 81.20 Cod 11: PME inspection (REV) Cod 12: TOC inspection (REV1) Cod 13: PME + TOC inspection (REV + REV1) Cod 14: PIT Inspection (REV2) Cod 15: PME + PIT Inspection (REV + REV2) Cod 16: TOC + PIT Inspection (REV1 + REV2) Cod 17: PME + TOC + PIT Inspection (REV + REV1 + REV2)</p>	To exit the inspection mode move the NORM/ISP switch to Normal and close the safety chain to trigger the reset procedure
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	<p>Check:</p> <p>1- the correct operation of the Safety module and of its sensors ZP1 and ZP2; 2- Check the FAI/FAS or ENCODER sensors and the ZP sensor; 3- position of the magnets in the re-levelling zone; 4- RISO relay.</p>
45	Fault ZP		Door zone contact stays open when the sensor is in door zone position	<p>Check the correct operation of the door zone sensor (if present);</p> <p>See Fault # 33</p>

N.	Fault	Type	Description	Remedy
46	Multiplex link interrupted		In multiplex systems, this fault indicates that the link between two or more controllers in the multiplex loop is missing. Every controller switch to SIMPLEX-like functioning. Cod 0: cable wiring between controller Cod 255: firmware problem	Check the connection between the controllers (MULX board); Check all multiplex settings.
47	Faults memory		Errors in the faults memory	Erase 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 connector on screw terminals; 2- connection between the controller and the closest BDU; 3- the system configuration (§ 5.5)
49	BDU fault		In case of serial communication with floors, indicates the loss of link between the controller and one or more BDU at floors. On the BDU GREEN LED fast blinking (0,5 sec): OK GREEN LED slow blinking (1 sec): OK BDU not addressed RED LED ON: Faulty BDU RED LED slow blinking (1 sec): no communication. GREEN and RED LEDs slow blinking (1 sec): communication sync in progress.	Check BDU functions and its connections; Change defective BDUs; Repeat addressing procedure
50	Drift control		Drift control (if provided) activation: the system is put out of service at an extreme floor	Reset 82212 in the menu Faults (§ 5.3)
51	Wrong Password		If the system has a password, this fault appears after entering the wrong password for three times.	
52	Fault VVVF		A fault occurred in the inverter Cod value is the subcode info of VVVF's fault	Only in case of VVVF FUJI FRENIC LIFT. See annex 4.

N.	Fault	Type	Description	Remedy
53	Fault UCM		<p>UCM Circuit Fault:</p> <p>Cod 2: Brakes open Cod 3: Brakes closed in travel</p> <p>Cod 100: UCM Detection Cod 201: RUCM1 Stucked Open Cod 202: RUCM2 Stucked Open Cod 203: RUCM3 Stucked Open Cod 204: Monitor OSG A3 (stud stucked in extended position) Cod 210: RUCM1 Stucked Close Cod 220: RUCM2 Stucked Close Cod 230: RUCM3 Stucked Close Cod 240: Monitor OSG A3 (stud stucked in retracted position)</p>	Reset UCM in the menu Faults (§ 5.3).
54	Safety zone		<p>Only for lift with no car door and safety light curtains.</p> <p>Cod 0: Light curtain active during travel (lift wait for a new Car call to restart) Cod 1: Fail test CEDES door side A Cod 2: Fail test CEDES door side B Cod 10: Fail test on safety relay KSA Cod 20: Fail test on safety relay KSB</p>	Check circuit according cod's info.
55	Fault SCS		<p>Safety Circuit Shunt. Function enabled by "Shaft Monitor" parameter. See annex X</p> <p>Cod 2: Second contact door A shunted (FFA Signal). Cod 4: Floor door contacts door A Shunted (SE4 input) Cod 6: Car door contacts door A Shunted (SE6 input) Cod 12: Second contact door B shunted (FFA Signal). Cod 14: Floor door contacts door B Shunted (SE4 input) Cod 16: Car door contacts door B Shunted (SE6 input) Cod 100: No SE6 input during bypass (ISO Circuit)</p>	Check circuit according cod's info. Reset SCS parameter in the menu Faults (§ 5.3).

N.	Fault	Type	Description	Remedy
56	Fault UAS		<p>Unintended Shaft Access Function enabled by "Shaft Monitor" parameter. Must be used BDU with additional door input (could be NO or NC). System detect a manually floor door opening monitoring the auxiliary door input.</p> <p>Cod 1: One Floor door manually open (with no open door command). Cod 2: More than one Floor door manually open (at different floors)</p>	Reset UAS in the menu Faults (§ 5.3).
57	Bypass door		<p>Only for EN 81-20. Bypass active on door safety contacts. (Moving enabled only in inspection) Check also SM1 module monitor</p> <p>Cod 1: Bypass Car active Cod 2: Bypass Pre-Locks active Cod 3: Bypass Locks active Cod 100: Module SM1 locked</p>	Cod 100: Module SM1 is checked if only PME selector is active and no STOPS nor direction button pressed: in that condition module SM1 must be not enabled and SE3 input should be open
58	Overspeed		<p>Only for Encoder positioning system. In inspection or Temporary mode Lift's speed is more than 0,63 m/s</p>	Check encoder parameters or inspection speed in positioning menu.
59	Fault SHI		<p>Only for 81-21 Pre-triggered device</p> <p>Cod 0: Wrong feedback when SHI is not energized Cod 255: Wrong feedback when SHI is energized</p> <p>Manual protection: Cod 101: Monitor Relay RMPP (contact doesn't open) Cod 102: Monitor Relay RMPP (contact doesn't close)</p>	Check Pre-Triggered Device (or relay RMPP)

N.	Fault	Type	Description	Remedy
60	Fault ELGO		<p>ELGO Fault.</p> <p>Cod 4: Pre-triggered Stopping system Top</p> <p>Cod 5: Pre-triggered Stopping system Bottom</p> <p>Cod 8: Normal mode overspeed (pre tripping)</p> <p>Cod 9: Normal mode overspeed (final tripping)</p> <p>Cod 11: Inspection mode overspeed (final tripping)</p> <p>Cod 13: Teach mode overspeed (final tripping)</p> <p>Cod 14: Normal mode overspeed (leveling)</p> <p>Cod 15: Normal mode overspeed (re-leveling)</p> <p>Cod 24: Unintended car movement</p> <p>Cod 100: ELGO not in operative mode</p> <p>Cod 102: ELGO's Input EN81-21 in Manual Teach mode</p> <p>Cod 103: ELGO's eSGC_POW missing in Manual Teach mode</p> <p>Cod 104: Restarting error in Manual Teach mode</p> <p>Cod 200: Communication time out</p> <p>Cod 255: Magnetic Band missing</p>	<p>Check ELGO configuration data.</p> <p>Check ELGO wiring</p> <p>Make a Fault reset to remove the fault.</p>



This symbol means a blocking fault: switch off main power and then switch it on again to put the lift back in service.

Elevator car Positioning System and Stopping Accuracy

ELGO LIMAX 33 CP Absolute Encoder Counting System

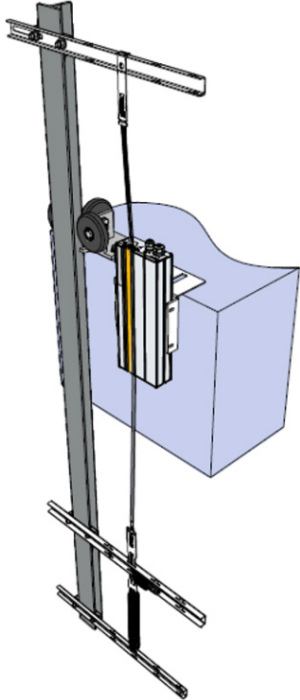
ELGO LIMAX 33 CP Absolute Encoder Counting System

The absolute encoder allows you to replace all the safety contacts inside the lift shaft. The position of the cabin is detected thanks to a magnetic strip.

Features:

- Absolute position detection and safety functions:

- Extra limit switches
 - Inspection limit switches
 - Overspeed Governor (combined with an electronic safety gear)
 - Door bypass circuit (movement with doors open)
 - UCM (in case of certified double brake)
- EU approved, SIL3 (TÜV)



Magnetic Tape



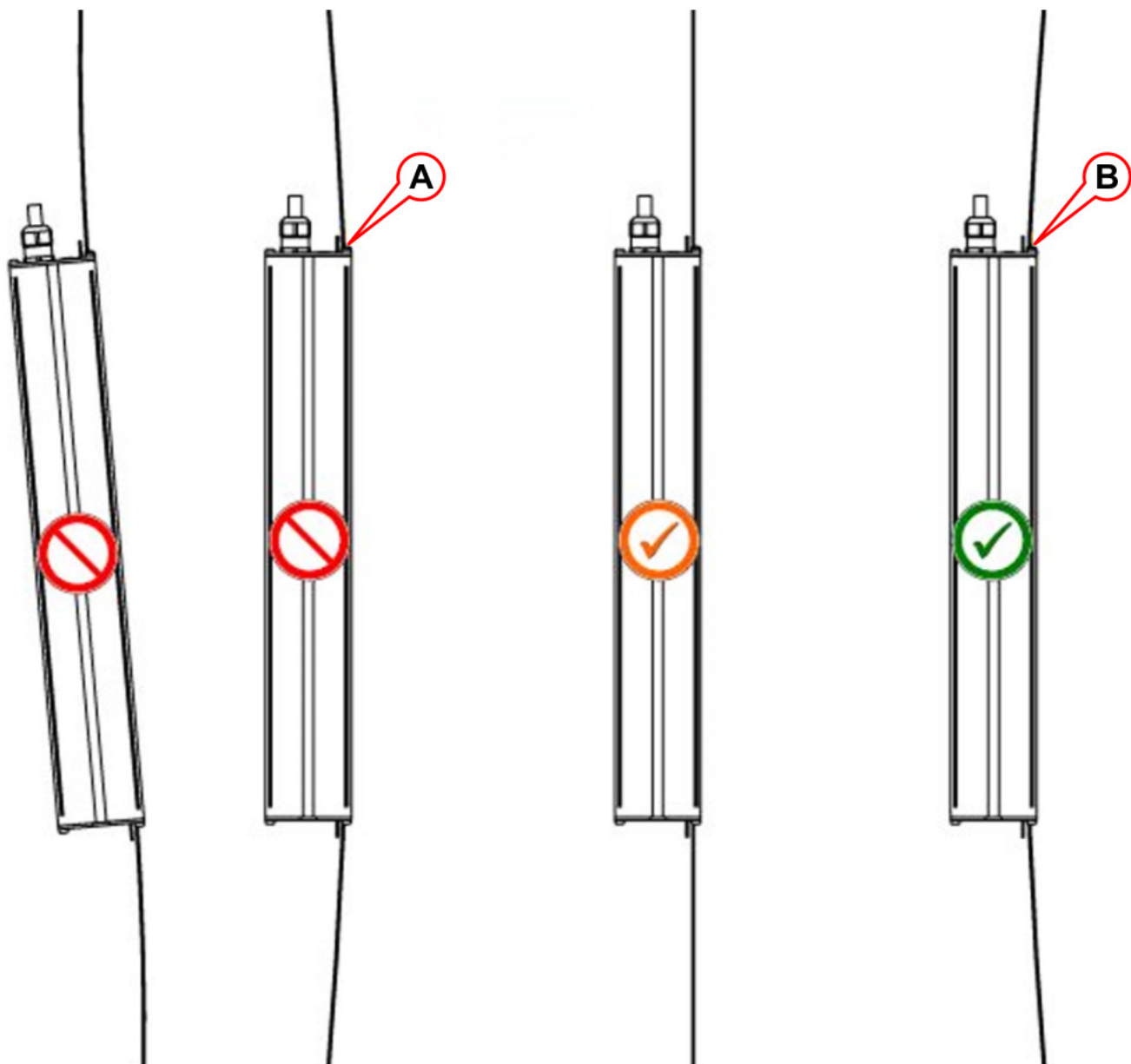
Remove all the magnets in the compartment before installing the magnetic tape.

Do not install the magnetic tape near permanent magnet motors.

Do not use magnetized tools near the Magnetic tape.

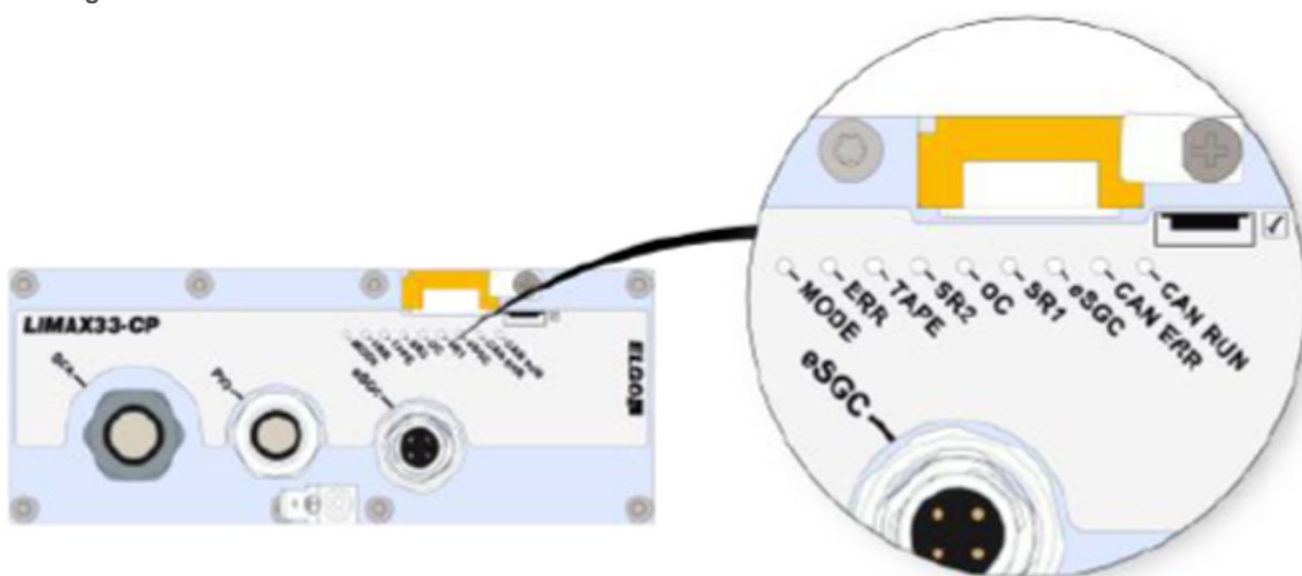
Do not use welding equipment near the magnetic tape.

Respect the fitting shown on the tape and make sure it is in the correct position shown in the following figure:



- A) – Tape touches the guide with the magnetized side.
 B) – Tape touches the guide with the steel side.

LED Signal

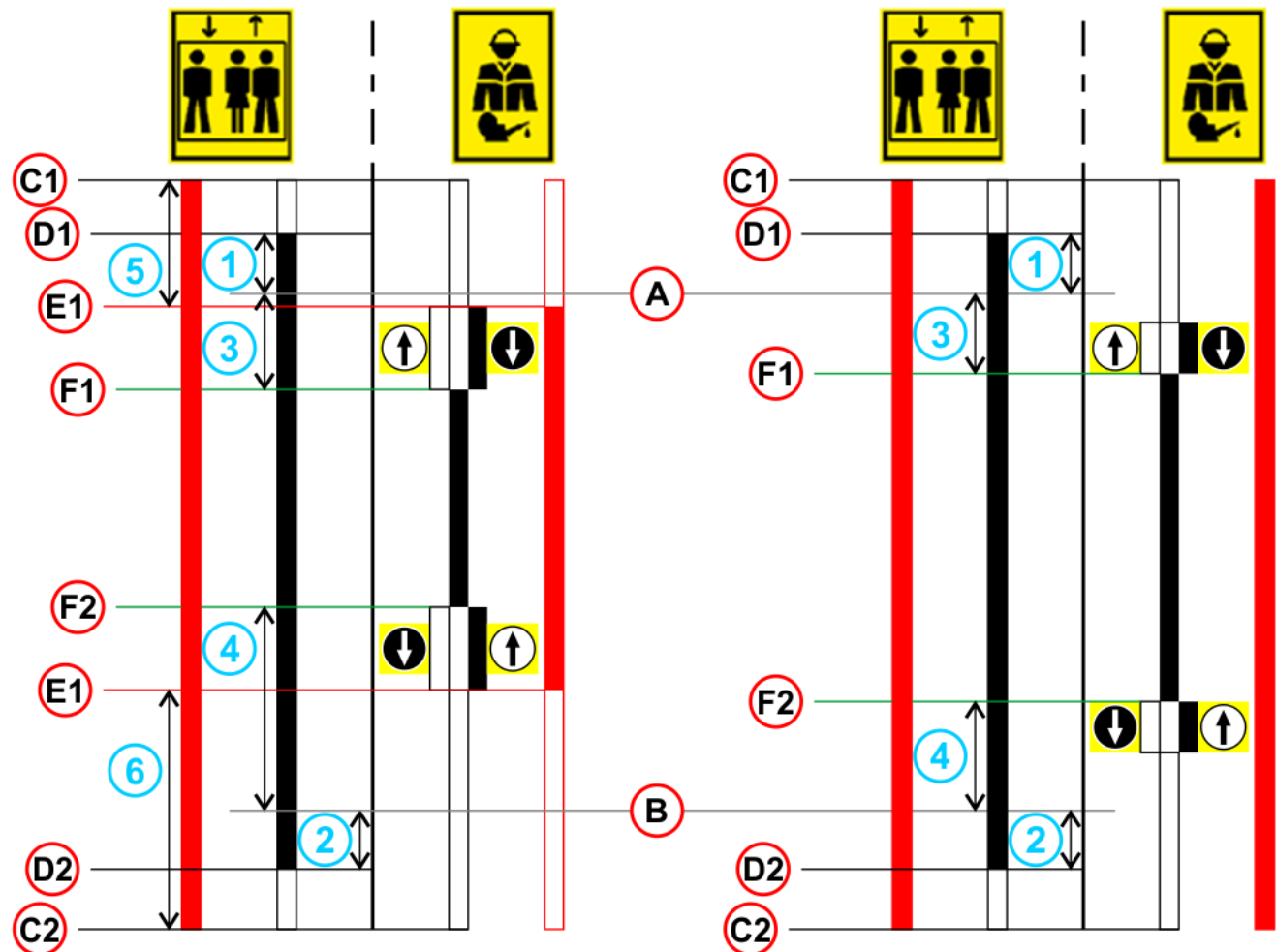


LED	DESCRIPTION
-----	-------------

LED	DESCRIPTION	
MODE	Normal mode	Slow Flashing (1 s)
	Pre-Commissioning Mode	Fast Flashing (0,1 s)
	Teach Mode	Lights permanently
ERROR	No Error	Led OFF
	Generic Error	Led ON
	Emergency Error	Flashing
TAPE	Magnetic Tape not detected	Led ON
eSGC	eSGC Contact close	Led ON
	eSGC Contact Open	Led OFF
OC	OC Contact close	Led ON
	OC Contact Open	Led OFF
SR1	SR1 Contact close	Led ON
	SR1 Contact Open	Led OFF
SR2	SR2 Contact close	Led ON
	SR2 Contact Open	Led OFF
CAN-ERR	Status CAN Open	Led ON
CAN-RUN	Status Can Open	Led OFF

Explanation of safety contacts

Reduced Head and/or Reduced PIT Installation	Sufficient Head and Pit clearance according EN81-20 §5.2.5.7 / § 5.2.5.8
--	--



	Normal Mode	A) -	TOP floor
	Inspection Mode	B) -	BOTTOM floor
<div> <div>OC open</div> <div>OC closed</div> </div> <div> <div>eSGC open</div> <div>eSGC closed</div> </div>	Safety contacts status	C1) -	Upper reference position
	Inspection UP button	C2) -	Lower reference position
	Inspection DOWN button	D1) -	Upper final limit switch
	Final limit switches Offset Up	D2) -	Lower final limit switch
	Final limit switches Offset Down	E1) -	Upper pre-triggered stopping system limit
	Inspection limit switches Offset Up	E2) -	Lower pre-triggered stopping system limit
	Inspection limit switches Offset Down	F1) -	Upper inspection limit switch

Reduced Head and/or Reduced PIT Installation		Sufficient Head and Pit clearance according EN81-20 §5.2.5.7 / § 5.2.5.8	
⑤	Pre-Triggered Stopping System Offset Up	F2) -	Lower inspection limit switch
⑥	Pre-Triggered Stopping System Offset Down		

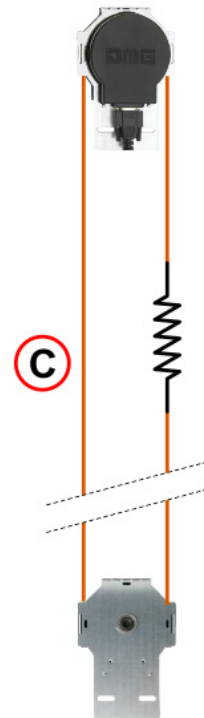
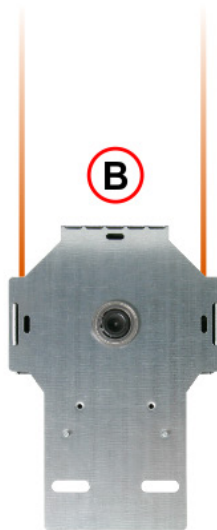
For manual adjustment of the positions of the indicated is possible from menu *<Positioning> Monitor Encoer* (see table below).

	Label	Page	Description
①	N_LIM_S	7	Upper final limit switch offset (offset over top floor)
②	N_LIM_D	7	Lower final limit switch offset (offset under bottom floor)
③	I_LIM_S	6	Upper inspection limit switch (offset under top floor)
④	I_LIM_D	6	Lower inspection limit switch (offset over bottom floor)
⑤	TRIPS	8	Upper Pre-Triggered Stopping System limit (from Upper Reference Position)
⑥	TRIPD	8	Lower Pre-Triggered Stopping System limit (from Lower Reference Position)

TRIPS and TRIPD values are used only if ELGO is part of Safety System for Reduced Head and/or Pit (ELGO + eSGC).

DMG Encoder based Counting System

DMG Encoder based Counting System

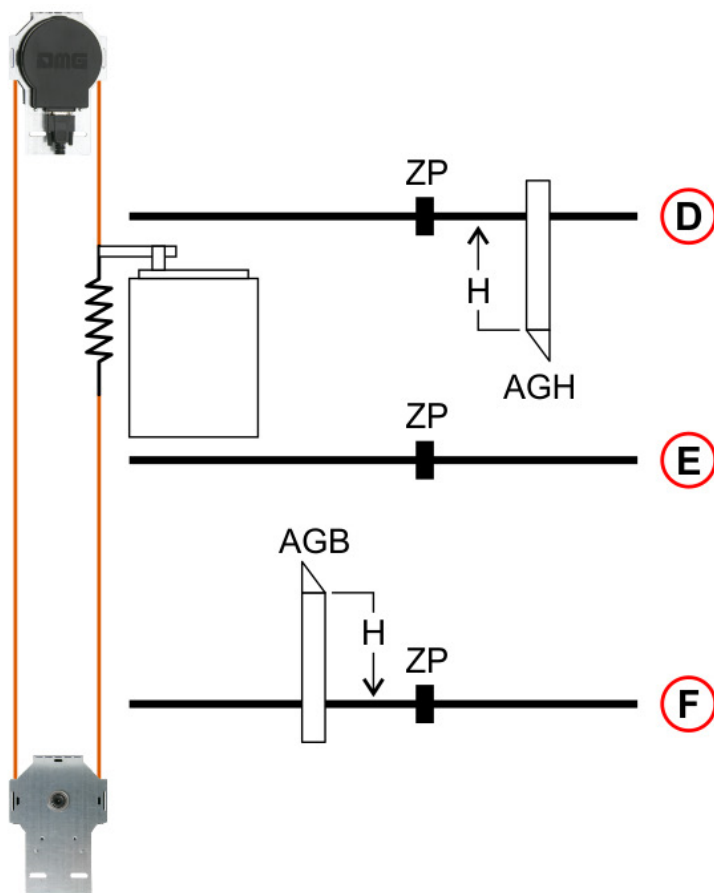


- A) – Encoder
- B) – Pulley
- C) – Symbols

DMG's rope and pulley Encoder provides the Playboard controller with a reliable, accurate and easy to install elevator car position detection system. The encoder calculates elevator car position by detecting the movement of the rope fixed to the cabin and checks this information with reference positions (detected during the initial self learning procedure). If present, discrepancies in the reading are detected and compensated at every passage on AGB/AGH limit switches and door zone (ZP) positions. Actual deceleration distance is set by the position of AGB/AGH limit switches. System accuracy is 1,2mm.

The activation of ZP door zone sensors also enables the door open command.

More over it is possible to set Inpsection limit point (no safety contacts).



D) – Terminal Top Floor

E) – Floor N

F) – Floor 0

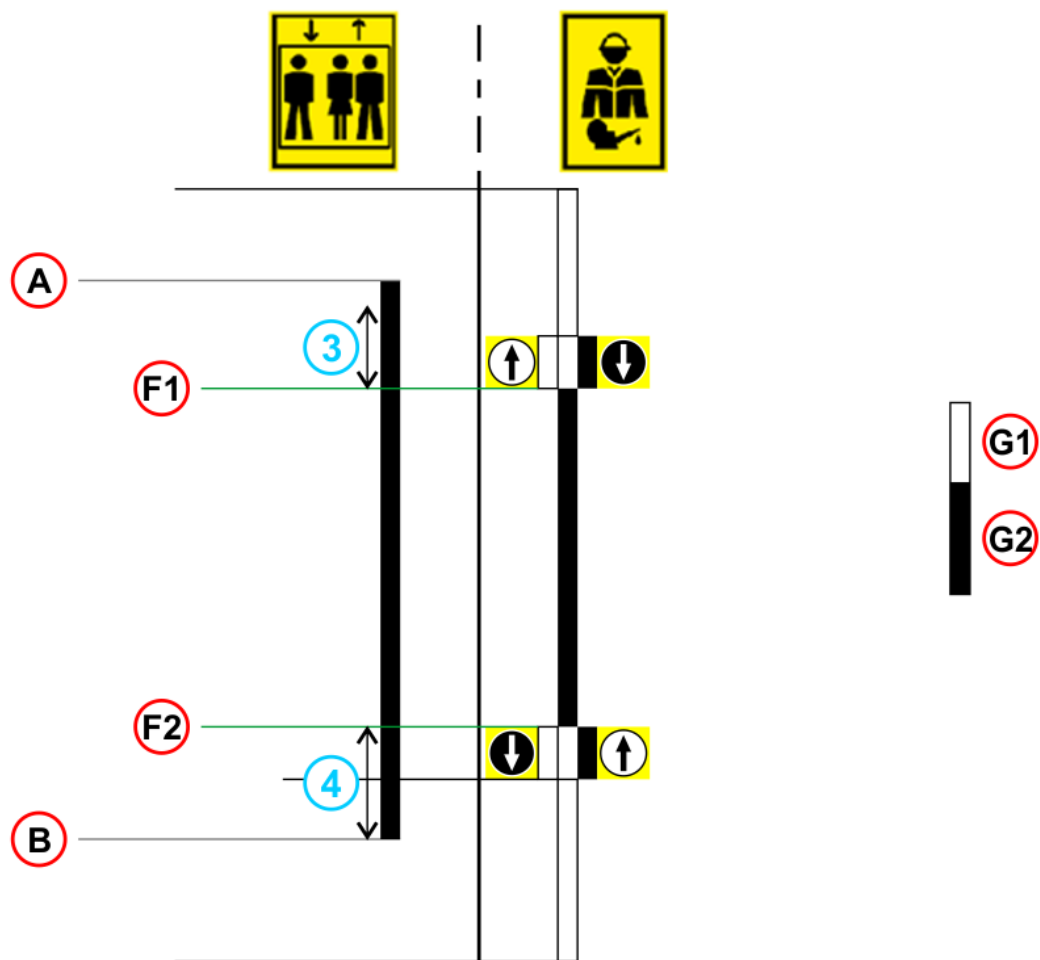
H) – Deceleration distance

ZP) – Door Zone

AGB) – Limit switch for bottom deceleration or reset

AGH) – Limit switch for top deceleration or reset

Inspection limit position



	Normal Mode	A) -	TOP floor
	Inspection Mode	B) -	BOTTOM floor
	Inspection UP button	F1) -	Upper inspection limit switch
	Inspection DOWN button	F2) -	Lower inspection limit switch
	Inspection limit position Up	G1) -	Moving enable
	Inspection limit position Down	G2) -	Moving not enabled

For manual adjustment of the positions of the indicated is possible from menu <Positioning> Monitor Encoder (see table below).

	Label	Page	Description
	I_LIM_S	6	Upper inspection limit (offset under top floor)
	I_LIM_D	6	Lower inspection limit (offset over bottom floor)

Lift speed and Deceleration distance

– Lift speed and Deceleration distance

In table is showed recommended values for deceleration distance and acceleration time according the lift's speed.

Speed [m/s]	Deceleration [mm]	Acceleration time [s]
0,6	900	3,0
0,7	1050	3,0
0,8	1200	3,0
0,9	1350	3,0
1,0	1500	3,0
1,1	1750	3,2
1,2	2000	3,3
1,3	2250	3,5
1,4	2500	3,6
1,5	2750	3,7
1,6	3000	3,8
1,7	3250	3,8
1,8	3500	3,9
1,9	3800	4,0
2,0	4100	4,1
2,1	4200	4,2
2,2	4700	4,3
2,3	5000	4,3
2,4	5300	4,4
2,5	5600	4,5
2,6	5950	4,6
2,7	6300	4,7
2,8	6650	4,8
2,9	7000	4,8
3,0	7350	4,9
3,1	7700	5,0
3,2	8050	5,1
3,3	8500	5,2
3,4	9000	5,3
3,5	9500	5,4
3,6	10000	5,6
3,7	10500	5,7

Speed [m/s]	Deceleration [mm]	Acceleration time [s]
3,8	11000	5,8
3,9	11500	5,9
4,0	12000	6,0

Annexs

Annex 1 – Multiplex Parameters Setting

– Duplex elevator (example 1)

– Example 1 –

Floors in Multiplex	Controller A floors	Controller B floors
7	7	7
6	6	6
5	5	5
4	4	4
3	3	3
2	2	2
1	1	1
0	0	0

	Controller A	Controller B
Number of floors	8	8
...		
Multiplex configuration		
Lift number	1.X	2.X
Floors in Multiplex	8	8
OFFSET	0	0

NOTE : please refer to examples 5 and 6 for the configuration of the button wiring indicated with X

– Duplex “Dog Leg” elevator (example 2/3/4)

– Example 2 –

Floors in Multiplex	Controller A floors	Controller B floors
7	7	5

Floors in Multiplex	Controller A floors	Controller B floors
6	6	4
5	5	3
4	4	2
3	3	1
2	2	0
1	1	
0	0	

	Controller A	Controller B
Number of floors	8	6
...		
Multiplex configuration		
Lift number	1.X	2.X
Floors in Multiplex	8	8
OFFSET	0	2

NOTE : please refer to examples 5 and 6 for the configuration of the button wiring indicated with X

– Example 3 –

Floors in Multiplex	Controller A floors	Controller B floors
7	7	
6	6	
5	5	
4	4	4
3	3	3
2	2	2
1	1	1
0	0	0

	Controller A	Controller B
Number of floors	8	5
...		
Multiplex configuration		
Lift number	1.X	2.X
Floors in Multiplex	8	8
OFFSET	0	0

NOTE : please refer to examples 5 and 6 for the configuration of the button wiring indicated with X

– Example 4 –





Floors in Multiplex	Controller A floors	Controller B floors
7		5
6		4
5	5	3
4	4	2
3	3	1
2	2	0
1	1	
0	0	


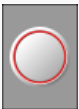

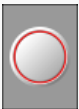
	Controller A	Controller B
Number of floors	6	6
...		
Multiplex configuration		
Lift number	1.X	2.X
Floors in Multiplex	8	8
OFFSET	0	2

NOTE : please refer to examples 5 and 6 for the configuration of the button wiring indicated with X

– Shared button wiring (example 5)

– Example 5 –

Controller A	Push-buttons	Controller B
7		7
6		6
5		5
4		4

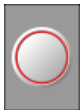







Controller A	Push-buttons		Controller B
3			3
2			2
1			1
0			0









	Controller A	Controller B
Number of floors	8	8
...		
Multiplex configuration		
Lift number	1.0	2.0
Floors in Multiplex	8	8
OFFSET	0	0

NOTE : each button must be connected to all controllers

Independent button wiring (example 6)

– Example 6 –

Controller A	Push-buttons		Controller B
7			7
6			6
5			5
4			4

Controller A	Push-buttons	Push-buttons	Controller B
3			3
2			2
1			1
0			0

	Controller A	Controller B
Number of floors	8	6
...		
Multiplex configuration		
Lift number	1.0	2.1
Floors in Multiplex	8	8
OFFSET	0	0

NOTE : each button is only connected to its controller and must NOT be connected in parallel

Multiplex call (example 7/8)

– Example 7 –

Controller A floors	Controller B floors
7	7
6	6
5	5
4	4
3	3
2	2
1	1
0	0

If this function is activated, two types of call are possible:

- a) standard pressure call (the call is assigned to the nearest elevator);*
- b) long pressure call (more than 3 seconds of pressure); this call is assigned to the elevator with lower “Lift Number” (MASTER); use this function if you have two elevator cars of different sizes (i.e. one for disabled passengers and one*

standard) and the call must go to the bigger elevator car.

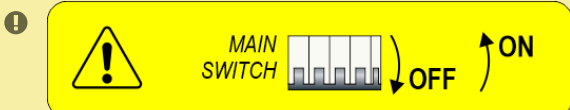
– Example 8 –

Controller A floors	Controller B floors
	5
	4
5	3
4	2
3	1
2	0
1	
0	

If this function is activated, two types of call are possible:

- a) standard pressure call (the call is assigned to the nearest elevator);
- b) long pressure call (more than 3 seconds of pressure); this call is assigned to the elevator which can reach the highest floor (UP call) or the lowest (DOWN call). The example shows a long pressure call always being assigned to controller A, whereas a long pressure UP call will always be assigned to controller B.

Annex 2 – Test and measures



The main switch of the controller must be switched off by every maintenance and at least 365 days after the last switch off and on.

This procedure is mandatory and must be followed in order to start the Autotest of the ELGO LIMAX CP33 and FUJI LM2 components.

– Test and measures (first part)

The following tests and measures may facilitate controls and tests to be performed before putting the installation in service (EN81-X D) and during the periodic maintenance interventions (EN81-X E). Some measures can be performed only through the encoder counting system.

Tests can be performed only if the installation is in normal operation mode; select parameter “test” to perform the test and press ENTER to start it. The test procedure can be stopped by switching the installation to inspection mode.

Test 1: Measure of the stopping space and time in UP direction, DMG UCM module in acceleration out of the door zone

Before starting the test, move the empty elevator car to the floor where you want to take the measure.

During the test, the elevator car will move upwards until the end of that floor door zone; now the forced intervention of the UCM module is activated and the elevator car will thus stop. After the elevator car has stopped, the distance covered from the floor level is shown (to be compared to point 9.11.5 of EN81) and the stopping time since the UCM activation. Important: the stopping distance must be calculated before, considering the sum of intervention times (controller + stopping unit). After the test, the UCM module must be reset (menu <Faults> reset UCM).

Test 2: Measure of the stopping space and time in DOWN direction, DMG UCM module

Before starting the test, move the empty elevator car to the floor where you want to take the measure.

During the test, the elevator car will move downwards until the end of that floor door zone; now the forced intervention of the UCM module is activated and the elevator car will thus stop. After the elevator car has stopped, the distance covered from the floor level is shown (to be compared to point 9.11.5 of EN81) and the stopping time since the UCM activation. Important: the stopping distance must be calculated before, considering the sum of intervention times (controller + stopping unit). After the test, the UCM module must be reset (menu <Faults> reset UCM).

Test 3: Measure of the stopping space and time in UP direction at rated speed

Before starting the test, move the empty elevator car to the ground floor.

During the test, the elevator car will move upwards up to the second last floor (AGH for two stops installations); now the elevator car stops. After the elevator car has been stopped, the distance covered from the second last floor and the stopping level and the stopping time are shown.

Test 4: Measure of the stopping space and time in DOWN direction at rated speed

Before starting the test, move the full loaded elevator car to the top floor.

During the test, the elevator car will move downwards up to the first floor (AGB for two stops installations); now the elevator car stops. After the elevator car has been stopped, the distance covered from the first floor and the stopping level and the stopping time are shown.

Test 5: Re-leveling test with too high elevator car (EN 81 point 14.2.1.2)

Before starting the test, move the elevator car to the floor where you want to take the measure.

During the test, the elevator car will move upwards until the re-leveling function is activated; now the elevator car is re-leveled. After the elevator car has stopped, the distance at which the re-leveling starts and the intervention time are shown. We recommend to perform the test at each floor to check the correct installation of the re-leveling sensors.

Test 6: Re-leveling test with too low elevator car (EN 81 point 14.2.1.2)

Before starting the test, move the elevator car to the floor where you want to take the measure.

During the test the elevator car will move downwards until the re-leveling function is activated; now the elevator car is re-leveled. After the elevator car has stopped, the distance at which the re-leveling starts and the intervention time are shown. We recommend to perform the test at each floor to check the correct installation of the re-leveling sensors.

— Test and measures (second part)**Test 7: Final limit switch test (EN 81 point 10.5)**

Before starting the test, move the elevator car to the ground or top floor.

During the test the elevator car will move towards the shaft end until the safety chain opens (or until the FCO input is detected). After the elevator car has stopped, the distance between the intervention floor and the limit switch intervention and the status of FCO input (NO contact for registering the limit switch intervention) are shown. The elevator car can be moved beyond the limit switch through the inspection control panel in the machine room (in inspection mode the movement beyond the top and bottom floor is disabled) to put the elevator car or the counterweight on the shock absorbers and perform the rope slipping test. Move the elevator car out of the limit switch area and put the installation in normal operation mode (if the second NO contact of the FCO input is connected, you must reset FCO in the menu "Faults").

Test 8: Motor run time test (EN 81 point 12.10)

Before starting the test, move the elevator car to the ground or top floor.

During the test the elevator car will move towards the opposite extreme floor at null speed. After 5 seconds, the up/down run time error will be detected (check in the menu "Faults"). Clear all errors to put the installation in normal operation mode again.

Test 9: System balancing test

Before starting the test, place the cab on the ground floor with the weight suited to balance the system itself (typically 50% of the maximum load). During the test the cabin will start in the direction of the highest floor and the absorbed current at the middle of the shaft will be displayed. The cabin will then move to the lowest floor, once again displaying the absorbed current at the middle of the shaft. The values will also be preserved after the end of the test for

evaluation purposes.

Test 10: ELGO UCM in UP direction (ELGO-CP)

Before starting put the empty elevator car to the floor where you want to make the test (excluded top floor).

During the test the lift starts in UP direction up to the end of door zone; at this point ELGO will give a fault (Fault ELGO Cod. 24) and stop the elevator car (OC contact open) and on the display is showed space and time of system intervention (to be compared with Elevator N81 point 9.11.5).

IMPORTANT: spaces must be calculated before as a sum of intervention times (controller, Stopping device)

After test it is necessary a fault reset (Menu Fault, Reset) to put the ELGO LIMAX33-CP in normal operating mode.

– Test and measures (third part)

Test 11: ELGO UCM in DOWN direction (ELGO-CP)

Before starting put the empty elevator car to the floor where you want to make the test (excluded bottom floor).

During the test the lift starts in DOWN direction up to the end of door zone; at this point ELGO will give a fault (Fault ELGO Cod. 24) and stop the elevator car (OC contact open) and on the display is showed space and time of system intervention (to be compared with EN81 point 9.11.5).

IMPORTANT: spaces must be calculated before as a sum of intervention times (controller, Stopping device)

After test it is necessary a fault reset (Menu Fault, Reset) to put the ELGO LIMAX33-CP in normal operating mode.

Test 12: OSG and Safety Gear test (ELGO-CP + eSGC)

Before starting put the elevator car to the top or bottom floor.

During the test the lift starts in high speed and the OSG+eSGC will open at nominal speed (Fault ELGO Cod. 9) stopping the elevator car.

After test it is necessary a fault reset (Menu Fault, Reset) to put the ELGO LIMAX33-CP in normal operating mode.

Test 13: ETSL system intervention in UP direction (ELGO-CP)

Optional function. In normal condition protection open OC contact if the cabine's speed is too high during the UP direction trip (risk for counterweight on the buffers).

During the test ELGO consider the middle of the Shaft as if it were the Upper Reference point.

Before starting the test, place the empty cabin on the ground floor (lowest floor) without load to simulate the worst conditions. During the test the cabin will start towards the highest floor. Before the mid-point of the lift shaft the ELGO will open the OC safety contact (Fault ELGO Cod. 16) and the elevator car will stop for brake intervention before reaching the half compartment position (assumed as the simulated buffer position).

The intervention time (from the opening of the OC contact) and distance from the mid-point of the lift shaft (safety margin with the buffers) are displayed.

Test 14: ETSL system intervention in DOWN direction (ELGO-CP)

Optional function. In normal condition protection open OC contact if the cabine's speed is too high during the UP direction trip (risk for cabine on the buffers).

During the test ELGO consider the middle of the Shaft as if it were the Lower Reference point.

Before starting the test, place the cabin on the top floor with a fully loaded lift cabin to simulate the worst conditions.

During the test the cabin will start towards the bottom floor. Before the mid-point of the lift shaft the ELGO will open the OC safety contact (Fault ELGO Cod. 16) and the elevator car will stop for brake intervention before reaching the half compartment position (assumed as the simulated buffer position).

The intervention time (from the opening of the OC contact) and distance from the mid-point of the lift shaft (safety margin with the buffers) are displayed.

Test 15: Reduced Head Safety test (EN 81-21 – ELGO-CP+eSGC)

Test for Reduced Head and Protection system based on ELGO+eSGC.

Protection intervention is after a shaft access, in the point given by distance TRIPS (Monitor Encoder, pag 8) from the Upper Reference position (counterweight on the buffer).

During the test ELGO intervention is given also with lift in normal mode, without any shaft access simulation. Before starts the test put the lift under the intervention point.

During the test elevator car will start in UP direction (to the top floor). When elevator car reaches the intervention point, ELGO will open OC contact and switch off the eSGC output stopping the elevator car (Fault ELGO Cod. 4).

After test it is necessary a fault reset (Menu Fault, Reset) to put the ELGO LIMAX33-CP in normal operating mode.

– Test and measures (fourth part)

Test 16: Reduced Pit Safety test (EN 81-21 – ELGO-CP+eSGC)

Test for Reduced Pit and Protection system based on ELGO+eSGC.

Protection intervention is after a shaft access, in the point given by distance TRIPD (Monitor Encoder, pag 8) from the Lower Reference position (Cabine on the buffer).

During the test ELGO intervention is given also with lift in normal mode, without any shaft access simulation.

Before starts the test put the lift over the intervention point.

During the test elevator car will start in DOWN direction (to the bottom floor). When elevator car reaches the intervention point, ELGO will open OC contact and switch off the eSGC output stopping the elevator car (Fault ELGO Cod. 5).

After test it is necessary a fault reset (Menu Fault, Reset) to put the ELGO LIMAX33-CP in normal operating mode.

Test 17: OC Safety contact test (ELGO-CP)

Only for installation with ELGO-CP.

Test checks if the safety contact OC inside the ELGO works properly: contact opens for 0,5 sec. (you can check the safety chain open from SE3 point).

Test is automatically executed one time a day.

It is no further operation needed after the test (lift is in normal Service).

Test 18: Door Disable

Test for temporarily disabling door operators.

Test is useful if technician needs to make some test with lift in normal mode but without the risk some user can enter in the elevator car.

It is possible to program a time of 1/5/10/30/60 minutes.

Time is valid also if Lift will be put in inspection / Normal again.

At the end of timer, lift comes back in normal mode.

Test 19: Black out Simulation

Only for installation with full emergency option. Lift behaviour is the same you have when power supply goes off, so it make an automatic emergency moving the car to the floor and opens the door.

Test 20: Telephon call for low batteries level simulation

Controller send command to DMCPIT (output ALARM Enable) as if the battery level was wrong for an emergency call. This signal has to be connected to the telephone's input for emergency call.

Annex 3 – Instructions for Software update

– PlayPad (PLP) SW update procedure

SW update file for PLP is:

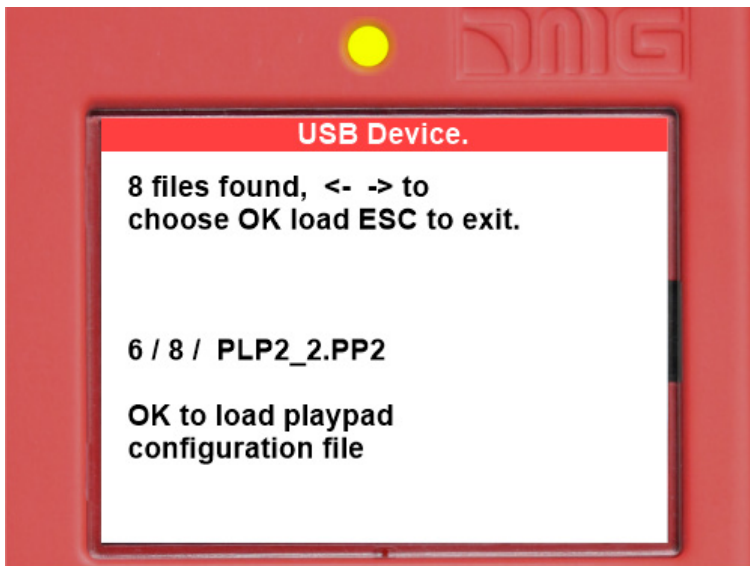
FileName.PP2

Insert the USB device into the slot, waiting for the message as in the Figure 1.



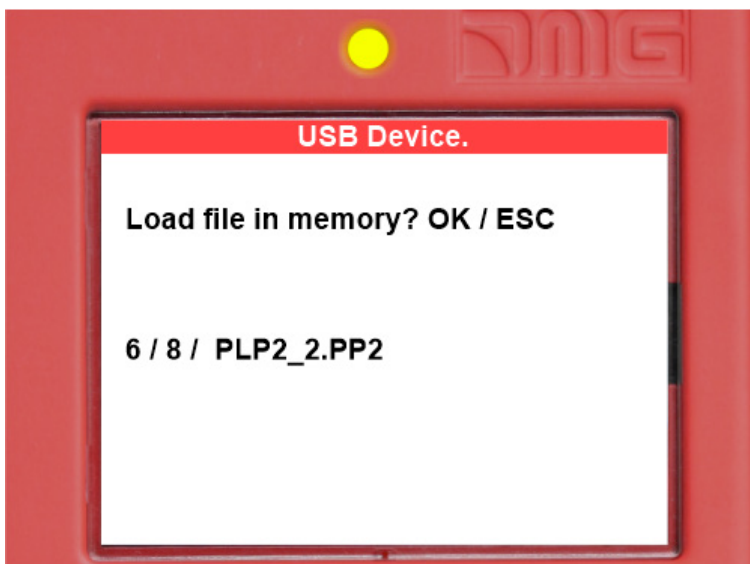
(Figure 1)

Select "Put a file into PlayPad" (default), press OK button. Window changes into Figure 2.



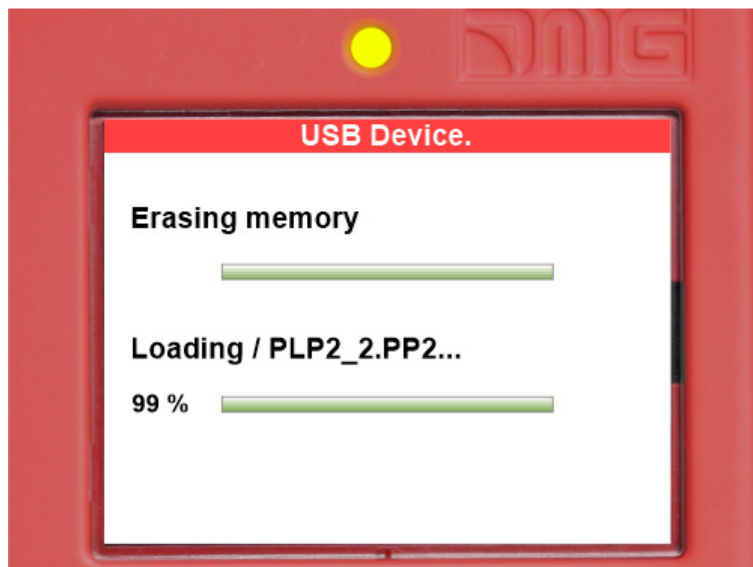
(Figure 2)

Follow the instruction on screen and select the .PP2 file (in the example PLP2_2.PP2) and press OK. Window changes into Figure 3



(Figure 3)

Press OK to confirm the update process. Window changes into Figure 4



(Figure 4)

At the end of Procedure you have to remove the USB (Figure 5 or Figure 6 will be appear).



(Figure 5)



(Figure 6)

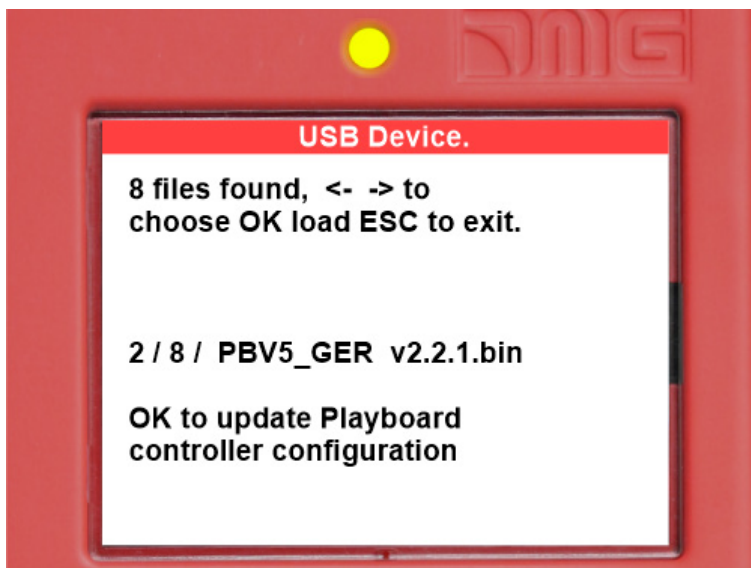
— Devices SW update procedure

Insert the USB device into the slot, waiting for the message as in the Figure 7 and Select “Put a file into PlayPad” (default) and press OK button.



(Figure 7)

Window changes into Figure 8.



(Figure 8)

Follow the instruction on screen and select the *.bin file and press OK. Window changes into Figure 9.



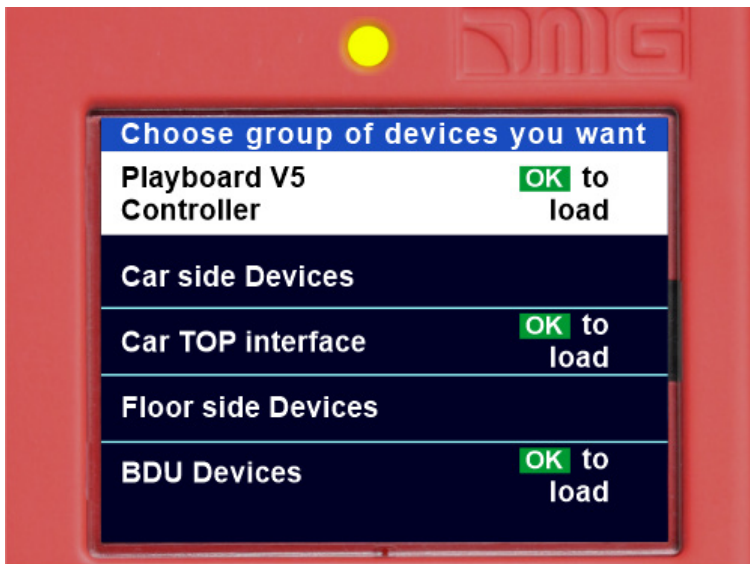
(Figure 9)

Press OK to confirm the update process. Window changes into Figure 10, wait for a while.



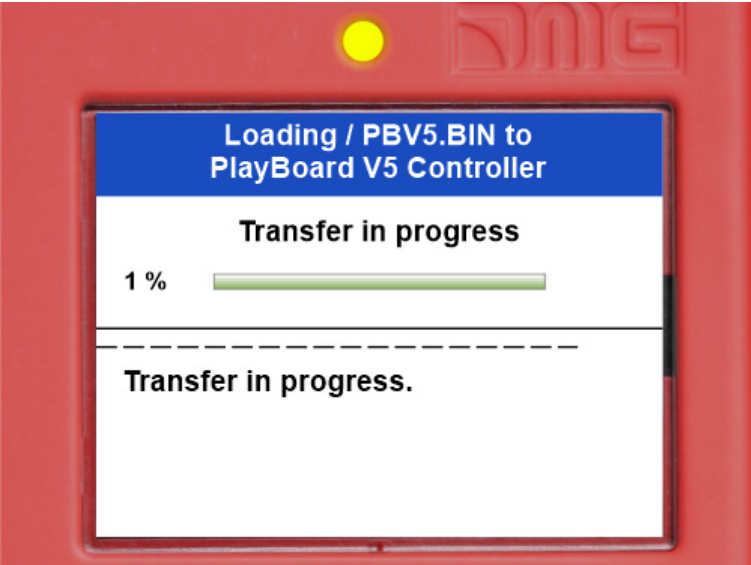
(Figure 10)

Select the Device (or device group) to update and press OK (Figure 11)



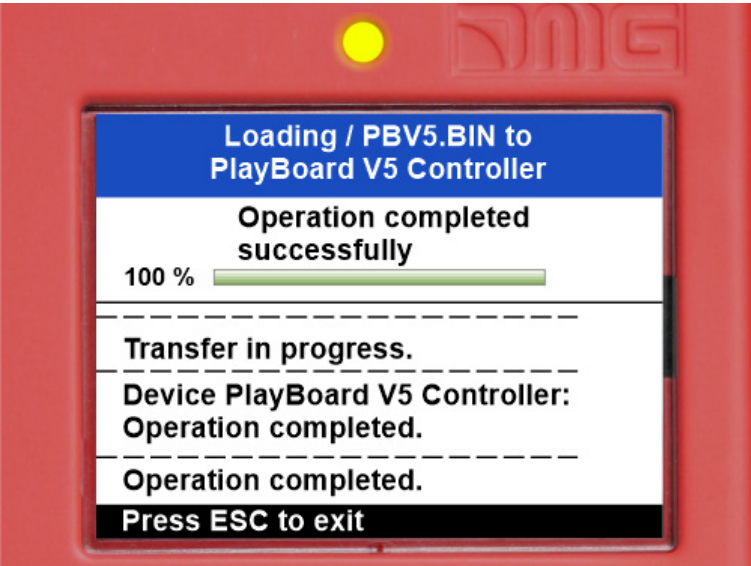
(Figure 11)

Window changes into Figure 12: wait until the process is completed. If you need to press any arrow button to switch on the backlight.



(Figure 12)

When the process ends (Figure 13) press Esc button until the window shows "Please remove USB Device" (Figure 14).



(Figure 13)



(Figure 14)

Device	Time needed for updating SW
Mother board (Playboard Controller)	3 minutes
PlayPad 4.0	1 minute
TOC Board (Car TOP Interface)	1 minute
DMCPIT Board (Car COP Interface)	1 minute
Serial Pushbittons Intarfaces (BDU Devices)	30 seconds
Expansion boards (PIT8 / 16RL / 16IO)	30 seconds

(Table III.1 – Timing for SW update)

Annex 4 – VVVF Frenic Lift Setting

Motor Tuning (VVVF Controller)

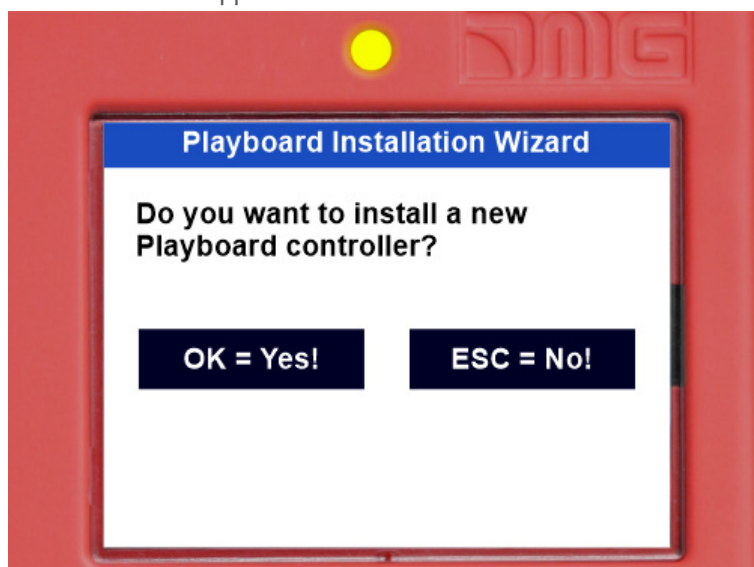
In the case of a Controller equipped with electric inverter Fuji FRENIC Lift, the self-learning procedure of motor data (“Tuning”) must be performed. This must be carried out in order to align the functioning of the drive to the electrical characteristics of the motor on site. The tuning procedure must be done in temporary operation. The procedure is different according to the type of Motor.

– Tuning procedure –

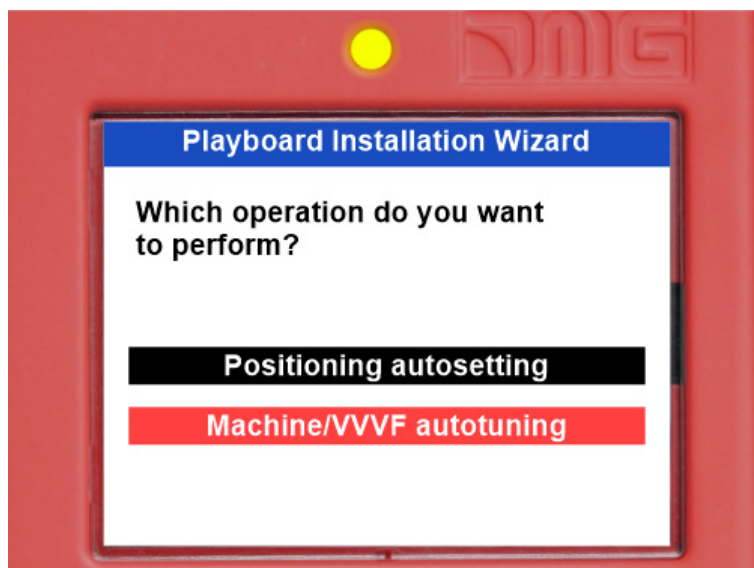
Select “Installation menu”



In the screen will appear:



Confirm by pressing OK and select “Machine / VVVF Autotuning:



Insert the requested parameter and move on to the next one by pressing the Right Arrow.

The list of VVVF Parameter is:

Parameter	Description	Gearless Motor	Geared Motor
P01 - Motor Poles	Insert Motor Pole's number	X	X
F03 – Maximum Speed	Insert max motor Speed [RPM] (Motor Plate)	X	X
F04 – Rated Current	Insert Rated motor speed [Hz] (Motor Plate)	X	X
F05 – Rated Voltage	Insert Rated motor voltage [V] (Motor Plate)	X	X
P08 – M-%X	Insert value 10 %	X	
P07 – M-%R1	Insert value 5 %	X	
P06 – M-No Load Curr.	Insert value 0 [A]	X	
P03 – Motor Rated Current	Insert rated current [A] (Motor Plate)	X	
P02 – Motor Rated Cap	Insert rated power [kW] (Motor Plate)	X	
C11 – High Speed	Insert high speed [Hz] (Motor Plate)	X	
C10 – Middle Speed	Insert middle speed [Hz] (Inspection speed)	X	
C07 – Creep Speed	Insert low speed [Hz] (10% of C11)	X	
L01 – PG select	Set motor Encoder type: (VVVF Optional Boards)	X	X (*)
L02 – PG resolution	Insert Motor Encoder Resolution	X	X (*)

(*) Closed loop only

Last parameter is different according Motor Type:

GEARLESS motor:

L03 - P.P. Tuning
L03 - P.P. Tuning
<div>4</div>



Machine autotuning completed successfully
<div>OK</div>

Select 4 : Static Tuning

Select 5 : Dynamic tuning (only if free from ropes)

GEARED motor:

P04 - Motor Autotuning
P04 - Motor Autotuning
<div>3</div>



Machine autotuning completed successfully
<div>OK</div>

Select 3

In case of any problem go to the Fault menu to identify the Problem (§ Motor Tuning Errors)

At the end of the procedure, press the up/down button and check the correct elevator car movement direction; if not correct, invert values of parameters E98 and E99.

For closed loop installations, in the <I/O Status>, VVVF IN/OUT menu, check that the VVVF motor encoder value (4/7) is positive (+) during upward movement and negative (-) during downward movement when the FWD (1/7) command is activated. If not, invert a channel in the motor encoder of the VVVF.

— VVVF Optional Boards

L01	A/B Output channel	Absolute Signal	Note
0		None	Choice is not possible because for Asynchronous motors
1	12/15V Complementary; 12/15V Open Collector; 5V Line Driver	Z	For Encoder 5V Line Driver required optional board OPC-LM1-IL
2	5V Line Driver	3 bit code (segnale U, V, W)	Required optional board OPC-LM1-PP
3	5V Line Driver	4 bit gray code	Required optional board OPC-LM1-PP

L01	A/B Output channel	Absolute Signal	Note
4	Sinusoidal Differential Voltage 1 Vp-p	EnDat 2.1 (ECN1313 compatible)	Required optional board OPC-LM1-PS
5	Sinusoidal Differential Voltage 1 Vp-p	Sinusoidal Differential Voltage 1 Vp-p (ERN1387 compatible)	Required optional board OPC-LM1-PR

VVVF Fault Table

Code	Description	
OC1	Overcurrent during acceleration	The inverter momentary output current exceeded the overcurrent level.
OC2	Overcurrent during deceleration	
OC3	Overcurrent during running at a constant speed	
EF	Ground fault	Zero-phase current caused by ground fault in the output circuit has exceeded the allowable limit. (30kW or above)
OV1	Overvoltage during acceleration	The DC link bus voltage exceeded the overvoltage detection level.
OV2	Overvoltage during deceleration	
OV3	Overvoltage during running at a constant speed	
LV	Undervoltage	The DC link bus voltage dropped below the undervolt detection level.
Lin *	Input phase loss	An input phase loss occurred or the Interphase voltage unbalance rate was large.
OH1	Heat sink overheat	The temperature around the heat sink has risen abnormally.
OH2	External alarm	The external alarm THR was entered. (when the THR "Enable external alarm trip" has been assigned to any digital input terminal)
OH3	Inverter internal overheat	The temperature inside the inverter has exceeded the allowable limit.
OH4	Motor protection (PTC/NTC thermistor)	The temperature of the motor has risen abnormally.
DBH	Braking register overheat	The temperature of the Braking resistor has exceeded allowable limit.
OL1	Overload of motor 1	The electronic thermal protection for motor overload detection was activated.
OLU	Inverter overload	The temperature inside the IGBT has risen abnormally.
OS	Over speed prevention	The motor speed is higher than maximum speed * L32.
PG	Broken wiring in the PG	The motor speed is higher than maximum speed * L32.
nrb	NTC wire break error	Detected a wire break in the NTC thermistor detection circuit.
Er1	Memory error	An error has occurred when writing data to the inverter memory.

Code	Description	
Er2	Keypad communications error	A communications error has occurred between the key and the inverter. pad
Er3	CPU error	A CPU error or LSI error has occurred.
Er4	Option communications error	A communications error has occurred between the connected option card and the inverter.
Er5	Option error	An error was detected by the connected option card (not by the inverter).
Er6	Operation protection	An incorrect operation was attempted.
Er7	Tuning error	Auto-tuning or Magnetic Pole Position Offset tuning has failed, resulting in abnormal tuning results.
Er8	RS-485 communications error (port 1)	A communications error has occurred during RS-485 communication.
ErP	RS-485 communications error (port 2)	
OPL	Output phase loss	An output phase loss occurred.
ErE	Speed mismatching	The reference speed and the detection speed are different.
ErF	Data saving error during undervoltage	When the undervoltage protection was activated, the inverter failed to save data, showing this error.
ErH	Hardware error	The LSI on the power printed circuit board has malfunctioned due to noise, etc.
Ert	CAN open communication error	A communications error has occurred during CANopen communication.
ECF	EN1, EN2 terminals circuit error	An abnormality was diagnosed in EN1, EN2 terminals circuit.
Ot	Over torque current	Reference torque current became excessive.
DBA	Braking transistor broken	Detection of an abnormality in the brake transistor
bbE	Brake confirmation	The inverter detects mismatch between the brake control signal and brake detection (feedback) signal.
Eo	EN1, EN2 terminals chattering	Detected collision between ENOFF output and EN1/EN2 terminals. input
ECL	Customizable logic error	A customizable logic configuration error has caused an alarm.
OH6	Charging resistor overheat	The temperature of the charging resistor inside the has exceeded the allowable limit. inverter
rbA	Rescue by brake alarm	No movement detected during rescue operation by bra control.
tCA	Reaching maximum numbers of trip counter	The number of trip direction changes has reached the preset level.
SCA	Short-circuit control error	The inverter detects mismatch between the short-circuit control signal and short-circuit detection (feedback) signal.
LCO	Load-cell overload	Load-cell function has detected overload situation by means of preset level.

GEARED motor

In old motors the auto-tuning may fail: in these cases the auto-tuning type 1 (at point 10 select P04 = 1) can be executed but in this case the values P06 and P12 must be manually entered.

$$P06 = \sqrt{(P03)^2 - \left(\frac{P02 * 1000}{1.47 * F05}\right)^2}$$

Typical values of P06 are between 30% and 70% of P03.

$$P12 = F.r. * \left(\frac{S.s. - S.r.}{S.s.}\right) * 0,7$$

F.r. = Frequency rated

S.s. = Speed synchronous

S.r. = Speed rated

Acceptable values of P12 are between 0.5 and 5 Hz.

For instance, for a 4-pole motor, the Rated Frequency is 50 Hz, the synchronous speed is 1500 rpm and the Rated Speed is on the motor nameplate (always in revolutions per minute).

GEARLESS motor

In case of a problem “Error 52 = er7 Error VVVF” will show in the MENU ERRORS. In this case please check the connections of the motor encoder, clear the errors in the “Errors” menu and repeat the poletuning procedure from point 14.

After the poletuning procedure try to move the elevator in maintenance in up and down for some motor revolutions. If it moves correctly the procedure is over, otherwise, in the event of an error of the VVVF (ere or Ocx or Os), reverse the two motor phases changing the VVVF’s H190 parameter, clear the errors in the “Fault” menu and repeat the poletuning procedure.

Annex 5 – Rollback control and ride comfort

When the Playboard controller is applied to installations equipped with closed loop gearless machines, comfort and precision can be optimized thus avoiding undesired effects such as rollback (typical of lifts with unbalanced load).

The following parameters can be adjusted to achieve optimal setting for your installation. It is suggested to follow the procedure from start to end in the proposed sequence.

Starting phase adjustments

Adjust the following Parameters to compensate for other undesired effects.

Parameter	Description	Default		Suggested Adjustments
		Gearless	Geared	

Parameter	Description	Default		Suggested Adjustments
H64	Zero speed control time	0,8	0,8	Set value between 0,7 and 0,8 then increase to soften start phase ramp Important: In "Positioning" Menu : Delay DIR-BRK <= 0,2 s Delay BRK-S > H64
L68	RBC Proportional Gain (P constant) (specifies the P constant of the Automatic Speed Regulator to be used during RBC calculation time)	1,8	10	Motor overshoots: increase value by 0,25 Vibrations: decrease value by 0,25
L69	RBC Integral Time (I constant) (specifies the I constant of the Automatic Speed Regulator to be used during RBC calculation time)	0,003 s	0,010 s	Motor overshoots: decrease value by 0,001 Vibrations: increase value by 0,001
L73	Unbalanced load compensation (specifies the I constant of the Automatic Position Regulator to be used during RBC calculation time)	0,5	0	Motor overshoots: increase value by 0,50 Vibrations: decrease value by 0,50
L82	ON delay time (specifies the delay time during which the inverter main circuit is kept activated)	0,2 s	0,2 s	Larger Brakes: decrease value by 0,1 Smaller brakes: increase value by 0,1

Notes: L65 specifies whether to enable or disable the unbalanced load compensation (Rollback control). By default, it is set to 1 (Rollback control active). Speed is kept at zero when brakes are released to avoid rollback effect.

High speed phase adjustments

High speed "P" gains and "I" time constants are used by the Auto Speed Regulator (ASR) of the inverter during high speed lift travel. These constants can be adjusted as follows:

Parameter	Description	Default		Suggested Adjustments
		Gearless	Geared	
L24	"S" Curve setting 6	25\$	25%	Speed fluctuations: increase value by 5
L36	"P" Gain constant at high speed	2	10	Speed fluctuations increase value by 0,25 Vibrations: decrease value by 0,25
L37	"I" Time I constant at high speed	0,100 s	0,100 s	Speed fluctuations decrease 0,01 Vibrations: increase value by 0,01

Notes:

Increasing the *P* constant makes response from machinery faster but may cause overshooting or hunting in motor. Furthermore, due to resonance of machinery or overamplified noise, machinery or motor may produce vibration noise.

On the contrary, decreasing the *P* constant excessively delays response and may cause speed fluctuation in a long cycle, taking time to stabilize the speed.

"I" times values (L37 and L39) normally do not need to be changed, unless "*P*" gains are not enough to achieve optimal comfort. Setting a small "I" Time constant shortens the integration interval, providing a faster response. On the contrary, setting a large "I" Time constant lengthens it, having less effect on the ASR. This may help in case of resonance of machinery generating abnormal mechanical noise from the motor or gears.

➤ Stopping phase adjustments

Use the constants of the gains "*P*" and the times "*I*", at low speed, to make the final adjustment for the stop phase:

Parameter	Description	Default		Suggested Adjustments
		Gearless	Geared	
E16	Deceleration time # 9 (Last deceleration ramp)	1,80 s	1,80 s	Increase value by 0,5 to soften last ramp (max suggested value: 3 sec)
H67	Stop Hold Time	1,5 s	1,5 s	Car unable to stay at floor: increase 0,25 Important: In "Positioning" Menu : Delay BRK-DIR <= 2,0 s Stopping Boost = 1% or 2%
L38	"P" Gain constant at low speed	2	10	Car unable to stay at floor: increase 0,25 Vibrations: decrease value by 0,25
L39	"I" Time I constant at low speed	0,100 s	0,100 s	Car unable to stay at floor: decrease value by 0,01 Vibrations: increase value by 0,01
L83	Brake Control (OFF delay time) (specifies the delay time between stop speed and deactivation of the brake signal)	0,3 s	0,1 s	Larger Brakes: decrease value by 0,1 Smaller brakes: increase value by 0,1

Notes: In order to let the inverter perform the stopping phase correctly, make sure that operating contactors open at least 2 sec after brake contactor. If operating contactors open in advance, a shock on the machine may be heard.

➤ Case VVVF controllers with non-encoder based positioning systems

If a digital position system is used in the installation (i.e.: digital signal from magnetic detectors), some additional parameters must be used:

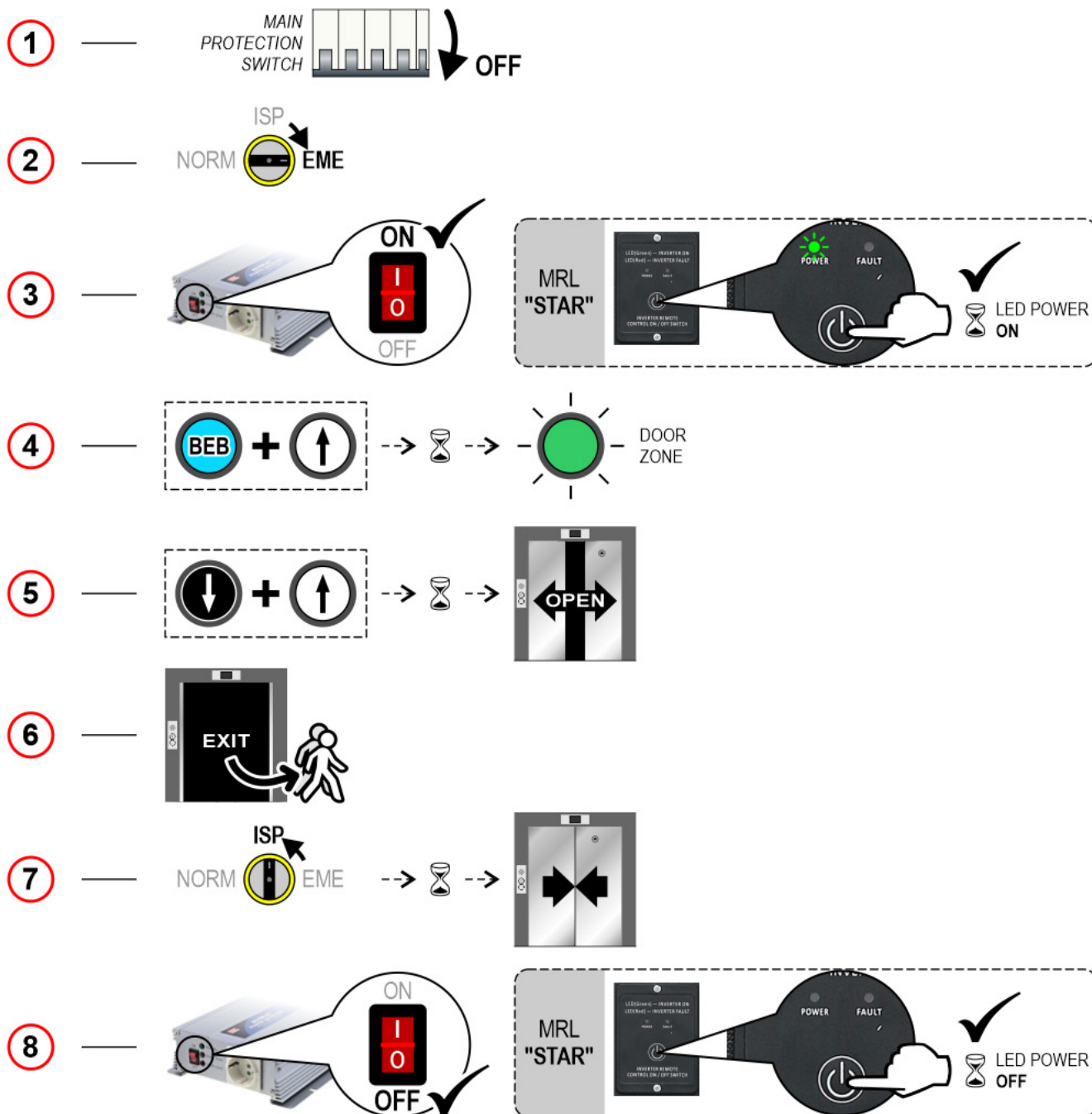
Parameter	Description	Default	Suggested Adjustments
F24	Starting speed holding time	0,7	Set value between 0,7 and 0,8
H64	Zero speed control time	0	Set value to 0
E12	Acceleration at high speed	2	Speed fluctuations: increase value by 0,25
E13	Acceleration at low speed	2	Motor stops: increase value by 0,25
C07	Creep Speed (5-10% of high speed)		Motor stops: increase value by 0,1 Vibrations: increase/decrease value by 0,1
C11	High Speed	See Nominal Value on the motor plate	If the car is unable to keep floor level, make sure the low speed phase is performed correctly by reducing high speed C11 to half of its value to check that low speed is kept for few seconds, then slowly increase C11

Annex 6 – Unbalancing Rescue Operation's

– Unbalancing Rescue Operation's



The operation must be performed by qualified personnel.



4) – Push BEB and Up buttons.

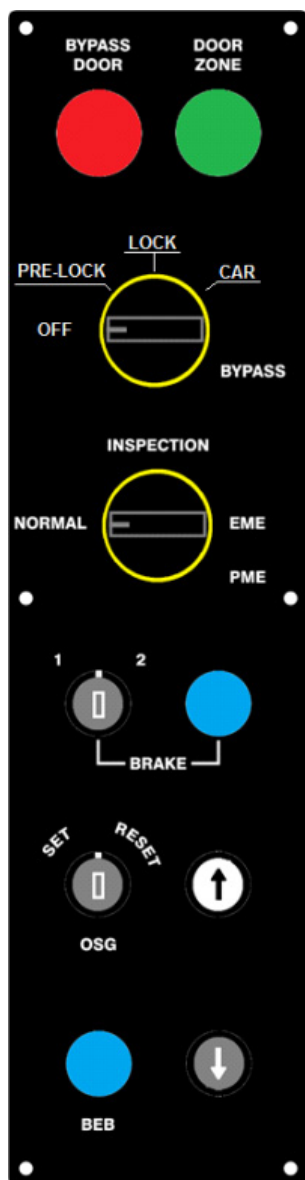
NOTE: Door safety chain contacts are completely bypassed. Brakes will be powered, Cabine should move for unbalance (direction according to the load in the cabine). In case of over speed ($> 0,3 \text{ m/s}$) Cabine will stop and need to release buttons and press them again to restart. When the Cabine reach the floor (Green light "DOOR ZONE") controller automatically stops. Release buttons BEB and direction.

Annex 7 – Control Panel

Control Panel



The operation must be performed by qualified personnel.



Bypass door's Safety contacts

Turn BYPASS Selector to the required position:

- With any BYPASS the RED light will switch ON.
- Controller gives the Bypass fault.
- Movement of lift will be possible only in Inspection or from PME.

PRE-LOCK = Preliminary contacts (Manual floor doors)

LOCK = Floor door Locks

CAR = Car door contacts

Single Brake Test

- Press BRAKE button
- Turn BRAKE key on position 1 to open First Brake or on 2 to open Brake.

Test can be made only:

- With cabin stationary and doors closed;
- During test 3 and test 4 (measurement of stopping distance at nominal speed)
- During deceleration and standard stop (to check Contactor locked fault)

Over Speed Governor Test

Operate on OSG Key:

- Activating of the OSG: turn to SET;
- Reset: Turn PME Selector to INSPECTION and turn OSG key to RESET.

Annex 8 – UCM Circuit

– UCM Circuit

The following table shows how to set the UCM Monitor parameter according to the device or circuit for detecting uncontrolled movements.

For Hydraulic installations the parameter is used for:

-) Central unit / valves configuration (see table 2)
-) UCM solution managed by controller

Table 1 – Monitor UCM

Monitor UCM		Device / Hydraulic Control Unit	UCM Solution	Actuator
Type	Time			
No		Not present	No	-
1	1,5 s	Overspeed Governor OSG A3 Montanari RQ-AXXX	Yes	Safety Gear
2	1,5 s	Controller = Brake monitor Movement with door open available only with Encoder ELGO LIMAX 33CP	Yes	A3 Certified Brakes
3...17		Do not use		
18	1,5 s	Brake monitor for Door opening enable (door opens only if brake is fall)	No	
19	1,5 s	DMG UCM Circuit 4.0 (no brake monitor) Only for temporarily disabling of Brake switches monitor	No	
20	1,5 s	DMG UCM Circuit 4.0 and Brake monitor	Yes	A3 Certified Brakes
21	1,5 s	Overspeed Governor OSG A3 Montanari RQ-AXXX Controller = Brake monitor	Yes	Safety Gear
22...29		Do not use		
30	1,5 s	Hydro Central Unit with Electromechanical valves (A3 second down valve is optional, no test performed)	Without UCM	
31	1,5 s	Hydro Central Unit with Electromechanical valves (A3 second down valve is optional, no test performed)	Yes = OSG A3	Safety Gear
32	1,5 s	Hydro Central Unit with Electromechanical valves (A3 second down valve is optional, no test performed)	Yes = UCM 4.0	Two valves
33	1,5 s	Hydro Central Unit with Electromechanical valves (A3 second down valve is optional, no test performed)		
34	1,5 s	Hydro Central Unit with Electromechanical valves (A3 second down valve is optional, no test performed)		

Monitor UCM		Device / Hydraulic Control Unit	UCM Solution	Actuator
35	1,5 s	Hydro Central Unit with Electromechanical valves + A3 valve (test)	Without UCM	
36	1,5 s	Hydro Central Unit with Electromechanical valves + A3 valve (test)	Yes = OSG A3	Safety Gear
37	1,5 s	Hydro Central Unit with Electromechanical valves + A3 valve (test)	Yes = UCM 4.0	Two valves
38	1,5 s	Hydro Central Unit with Electromechanical valves + A3 valve (test)		
39	1,5 s	Hydro Central Unit with Electromechanical valves + A3 valve (test)		
40	1,5 s	GMV model NGV Central Unit	Without UCM	
41	1,5 s	GMV model NGV Central Unit	Yes = OSG A3	Safety Gear
42	1,5 s	GMV model NGV Central Unit	Yes = UCM 4.0	Two valves
43	1,5 s	GMV model NGV Central Unit		
44	1,5 s	GMV model NGV Central Unit		
45	1,5 s	GMV model NGV A3 Central Unit (RDY – RUN signals monitor)	Without UCM	
46	1,5 s	GMV model NGV A3 Central Unit (RDY – RUN signals monitor)	Yes = OSG A3	Safety Gear
47	1,5 s	GMV model NGV A3 Central Unit (RDY – RUN signals monitor)	Yes = UCM 4.0	Two valves
48	1,5 s	GMV model NGV A3 Central Unit (RDY – RUN signals monitor)		
49	1,5 s	GMV model NGV A3 Central Unit (RDY – RUN signals monitor)		
50	1,5 s	Bucher Electronic unit LRV + NTA-2 (A3 second down valve is optional, no test performed)	Without UCM	
51	1,5 s	Bucher Electronic unit LRV + NTA-2 (A3 second down valve is optional, no test performed)	Yes = OSG A3	Safety Gear
52	1,5 s	Bucher Electronic unit LRV + NTA-2 (A3 second down valve is optional, no test performed)	Yes = UCM 4.0	Two valves
53	1,5 s	Bucher Electronic unit LRV + NTA-2 (A3 second down valve is optional, no test performed)		
54	1,5 s	Bucher Electronic unit LRV + NTA-2 (A3 second down valve is optional, no test performed)		
55	1,5 s	Bucher Electronic unit LRV + NTA-2 + DSV A3 (test)	Without UCM	
56	1,5 s	Bucher Electronic unit LRV + NTA-2 + DSV A3 (test)	Yes = OSG A3	Safety Gear
57	1,5 s	Bucher Electronic unit LRV + NTA-2 + DSV A3 (test)	Yes = UCM 4.0	Two valves

Monitor UCM		Device / Hydraulic Control Unit	UCM Solution	Actuator
58	1,5 s	Bucher Electronic unit LRV + NTA-2 + DSV A3 (test)		
59	1,5 s	Bucher Electronic unit LRV + NTA-2 + DSV A3 (test)		
60	1,5 s	Bucher Electronic unit i-Valve / iCON-2 (SMA monitor signal)	Without UCM	
61	1,5 s	Bucher Electronic unit i-Valve / iCON-2 (SMA monitor signal)	Yes = OSG A3	Safety Gear
62	1,5 s	Bucher Electronic unit i-Valve / iCON-2 (SMA monitor signal)	Yes = UCM 4.0	Two valves
63	1,5 s	Bucher Electronic unit i-Valve / iCON-2 (SMA monitor signal)		
64	1,5 s	Bucher Electronic unit i-Valve / iCON-2 (SMA monitor signal)		

Table 2 – Hydraulic Central unit managed

Control Unit	A3 valve	Valves command	Monitor UCM	Note
Generic 2 or 3 valves BLAIN EV100 GMV T3010 MORIS CM 320	No	CV1 = UP CV2 = DOWN CV3 = HIGH SPEED	30 ... 34	CV4 can be used instead of CV1 as UP valve in order to exclude Soft Stop (valve energized also after motor stops)
Generic 2 or 3 valves BLAIN EV100 GMV T3010 MORIS CM 320	Yes	CV1 = UP CV2 = DOWN CV3 = HIGH SPEED CV5 = A3 VALVE	30 ... 34 (*) 35 ... 39 (**)	CV4 can be used instead of CV1 as UP valve in order to exclude Soft Stop (valve energized also after motor stops)
GMV NGV	No	CV1 = UP CV2 = DOWN CV3 = HIGH SPEED CV4 = MIDDLE SPEED CV5 = INSPECTION	40 ... 44	

Control Unit	A3 valve	Valves command	Monitor UCM	Note
GMV NGV A3	No	CV1 = UP CV2 = DOWN CV3 = HIGH SPEED CV4 = MIDDLE SPEED CV5 = INSPECTION	45 ... 49	Monitor signals RDY / RUN
Bucher LRV Bucher NTA-2	No	CV1 = UP CV2 = DOWN	50 ... 54	Need one 16RL board configured as 1 wire per floor HYD
Bucher LRV Bucher NTA-2 Bucher NTA-2 + DSV A3	Yes	CV1 = UP CV2 = DOWN CV5 = A3 VALVE	50 ... 54 (*) 55 ... 59 (**)	Need one 16RL board configured as 1 wire per floor HYD
Bucher iCON-2 Bucher i-Valve		CV1 = UP CV2 = DOWN	60 ... 69	Need one 16RL board configured as 1 wire per floor HYD

(*) = No test 2 valves

(**) = With 2 valves test

Annex 9 – Installation Type

– Installation Type

The following table indicates how to set the UCM parameter according to the type of system, including the solutions adopted for protection in systems with reduced headroom and / or pit spaces.

The use of monostable contacts involves the presence of a bistable circuit in the switchboard.

UCM		Installation Type	Reduced		Door Contacts	
Type	Time		PIT	HEAD	Monostable	Bistable
No		EN 81.1 / EN 81.2				
1	1,5 s	EN 81.1 / EN 81.2 with Bypass door circuit				
2 ... 19	1,5 s	Not use				
20	1,5 s	EN 81.20 with monostable contacts Pit Access control			X(*)	
21	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device ELGO + OSG A3 (type 1)		X	X(*)	X

UCM		Installation Type	Reduced		Door Contacts	
22	1,5 s	EN 81.20 / 21 with bistable contacts Manual Protection Device in PIT		X	X(*)	X
23	1,5 s	EN 81.20 / 21 with bistable contacts Manual Protection Device in PIT	X			X(*)
24	1,5 s	EN 81.20 / 21 with bistable contacts Manual Protection Device in PIT	X	X		X
25	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device SHI Technolift		X	X(*)	X
26	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device SHI Technolift	X			X(*)
27	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device SHI Technolift	X	X		X
28	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device OSG A3 Montanari		X	X(*)	X
29	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device OSG A3 Montanari	X			X(*)
30	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device OSG A3 Montanari	X	X		X
31	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device ELGO + OSG A3 (type 2)	X	X		X
32	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device AMI 100 CMF		X	X(*)	X
33	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device AMI 100 CMF	X			X(*)
34	1,5 s	EN 81.20 / 21 with bistable contacts Protection Device AMI 100 CMF	X	X		X
35	1,5 s	EN 81.20 / 21 with monostable contacts Manual Protection Device in PIT		X	X	
36	1,5 s	EN 81.20 / 21 with monostable contacts Manual Protection Device in PIT	X		X(*)	
37	1,5 s	EN 81.20 / 21 with monostable contacts Manual Protection Device in PIT	X	X	X	
38	1,5 s	EN 81.20 / 21 with monostable contacts Protection Device SHI Technolift		X	X	
39	1,5 s	EN 81.20 / 21 with monostable contacts Protection Device SHI Technolift	X		X(*)	
40	1,5 s	EN 81.20 / 21 with monostable contacts Protection Device SHI Technolift	X	X	X	
41	1,5 s	EN 81.20 / 21 with monostable contacts Protection Device OSG A3 Montanari		X	X	
42	1,5 s	EN 81.20 / 21 with monostable contacts Protection Device OSG A3 Montanari	X		X(*)	
43	1,5 s	EN 81.20 / 21 with monostable contacts Protection Device OSG A3 Montanari	X	X	X	

UCM		Installation Type	Reduced		Door Contacts	
44	1,5 s	EN 81.20 / 21 with monostable contacts Protection Device AMI 100 CMF		X	X	
45	1,5 s	EN 81.20 / 21 with monostable contacts Protection Device AMI 100 CMF	X		X(*)	
46	1,5 s	EN 81.20 / 21 with monostable contacts Protection Device AMI 100 CMF	X	X	X	

X(*) = Means that contact is needed only at the lowest floor door.

Annex 10 – Shaft Protection

– Shaft Protection

The following table indicates how to set the Shaft Protection parameter according to the system. The parameter activates two different functions:

- Checking jumpers on door contacts (SCS error)
- Unauthorized access control in the compartment (UAS error): function required on the Russian market.

Shaft Protection	SCS Fault	UAS Fault	
Type		Door contacts	Hatch contacts
No	Disabled	Disabled	
1 ... 5	Do not use		
6	Yes	Disabled	
7	Yes	Door contact N.O.	Disabled
8	Yes	Door contact N.C.	Disabled
9	Disabled	Disabled	Door contact N.O.
10	Disabled	Disabled	Door contact N.C.
11	Disabled	Door contact N.O.	Door contact N.O.
12	Disabled	Door contact N.C.	Door contact N.C.
13 ... 16	Do not use		
17	Yes	Disabled	Door contact N.O.
18	Yes	Disabled	Door contact N.C.
19	Yes	Door contact N.O.	Door contact N.O.
20	Yes	Door contact N.C.	Door contact N.C.

Annex 11 – Fire operation programming procedure

– Situation 1 – One Firefighters key only (at floor)

Enter the menu "SPECIAL FUNCTIONS" submenu "FIREFIGHTERS" and set:

- The floor where the fire-fighters key is located
- The Access (if there are multiple doors)
- The stand-by state of the key switch contact (NO or NC); in case of NC contact the CPOM input of TOC box must be shunted.
- The operation EN 81-72 (a)

Using these settings and once the fire-fighters key at fire-fighters floor has been activated (input POM), the elevator will go to the programmed floor, open the doors and turn off the Landing Operation Panels (PHASE 1); The Car Operating Panel remains in operation. The operation ends when the elevator arrives at the programmed floor and the fire-fighters key is turned to 'off' condition.

– Situation 2 – Two firefighters key switches (at floor and in the elevator car)

Enter the menu "SPECIAL FUNCTIONS" submenu "FIREFIGHTERS" and set:

- The floor where the fire-fighters key is located
- The Access (if there are multiple doors)
- The stand-by state of the key switches (NO or NC)
- The operation EN 81-72 (b)

Using these settings and once the fire-fighters key at the fire-fighter floor has been activated, the elevator will go to the programmed floor (PHASE 1), open the doors and turn off the Landing Operation Panels. The Car Operating Panel remains in operation but only after the fire-fighter key in the CAR (input CPOM) has been turned on. The operation ends when the elevator arrives at the programmed floor and the fire-fighters keys are turned to 'off' condition.

– Situation 3 – External fire contact for fire detection with one contact only

Enter the menu "SPECIAL FUNCTIONS" submenu "FIREFIGHTERS" and set:

- The floor where the elevator must go in case of direct activation of the contact from the external fire contact
- The Access (if there are multiple doors)
- The stand-by state of the contact of the external fire contact (NO or NC) . If there are programmed contacts of NC type the input CPOM of TOC box must be shunted
- The operation EN 81-72 (b)

Connect the contact to the POM input of the controller.

Using these settings and once the contact is activated by the external fire contact, the elevator will go to the programmed floor, open the doors and remain stopped (PHASE 1). The Landing Operation Panels and the Car operating Panel are disabled. The reactivation of the elevator will take place at the deactivation of the contact from the external fire contact.

– Situation 4 – External fire contact with one contact and one firefighters key only (at floor)

Enter the menu "SPECIAL FUNCTIONS" submenu "FIREFIGHTERS" and set:

- The floor where the fire-fighters key is located
- The Access (if there are multiple doors)
- The stand-by state of the key switch and of the external fire contact (NO or NC)
- The operation EN 81-72 (b)
- Connect the wiring as indicated in the electric diagram: the contact from the external fire contact must be connected

to the input CPOM of the TOC box.

The activation of this input will start PHASE 1 of the operation (also called evacuation) and will not allow elevator car calls without the activation of the fire-fighters key-switch. Using these settings and once the contact has been activated by the external fire contact, the elevator will go to the programmed floor, open the doors and remain stopped (PHASE 1). The Landing Operation Panels are disabled and the Car operating Panel remains in operation but only after turning on the fire-fighters key at the floor (input POM). The reactivation of the elevator will take place, (bringing the elevator to the programmed floor), by turning off the key and deactivating the contact from the external fire contact.

Situation 5 – External fire contact with one contact and two firefighters keys (at floor and in the elevator car)

Enter the menu “SPECIAL FUNCTIONS” submenu “FIREFIGHTERS” and set::

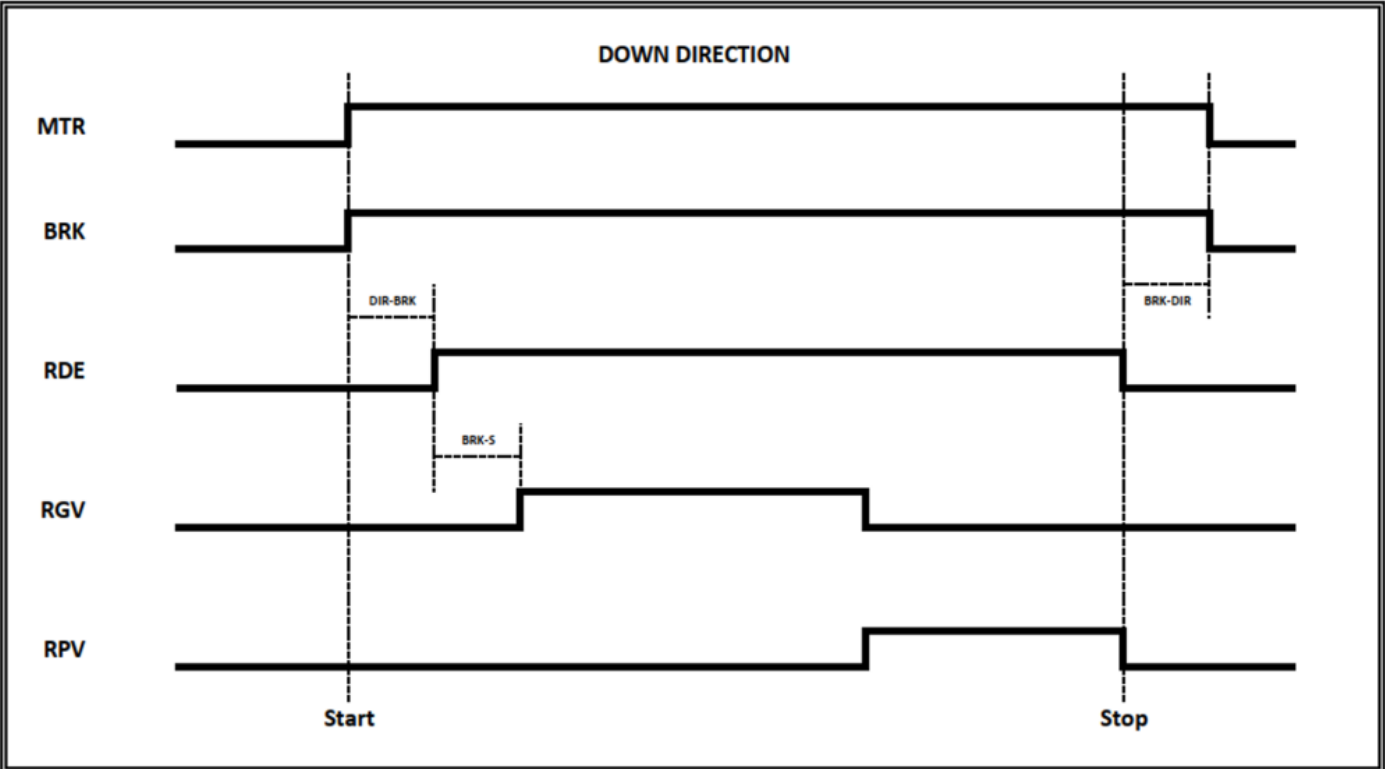
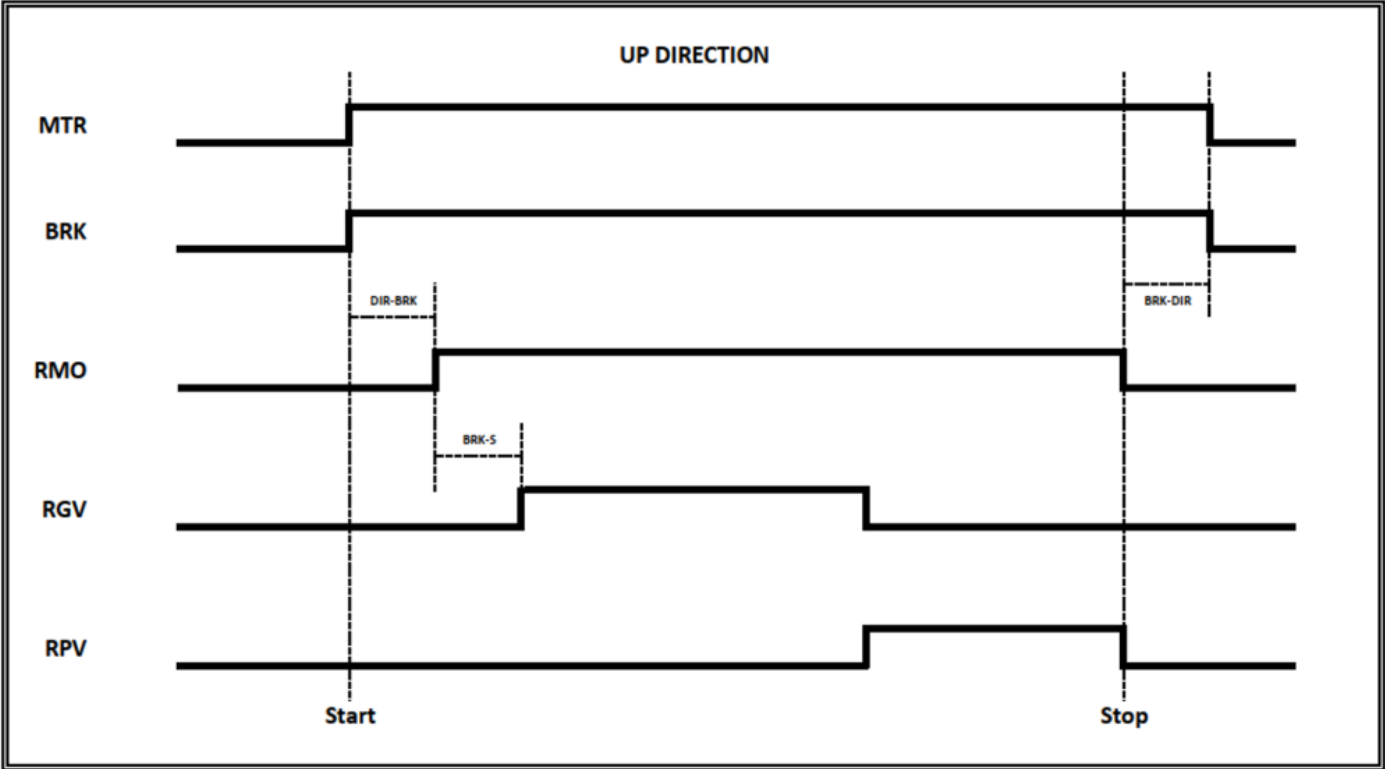
- The floor where the fire-fighters key is located
- The Access (if there are multiple doors)
- The stand-by state of the key switches and the external fire contact (NO or NC)
- The operation EN 81-72 (b)
- Connect the wiring as indicated in the electric diagram: the contact of the external unit must be connected together with floor key switch POM (in serial for NC contacts, in parallel for NO contacts).

The activation of this input will start PHASE1 of the operation (also called evacuation) and will not allow elevator car calls without the activation of the fire-fighters key-switch in the elevator car.

Using these settings and once the contact by the external fire contact OR the key at floor has been activated, the elevator will go to the programmed floor, open the doors and remain stopped (PHASE 1). The Landing Operation Panels are disabled and the Car Operating Panel remains in operation but only after the fire-fighter key in the CAR (input CPOM) has been turned on. The reactivation of the elevator will take place, (bringing the elevator to the programmed floor), by turning off the fire-fighter keys (at the floor and in the elevator car) and deactivating the contact from the external fire contact.

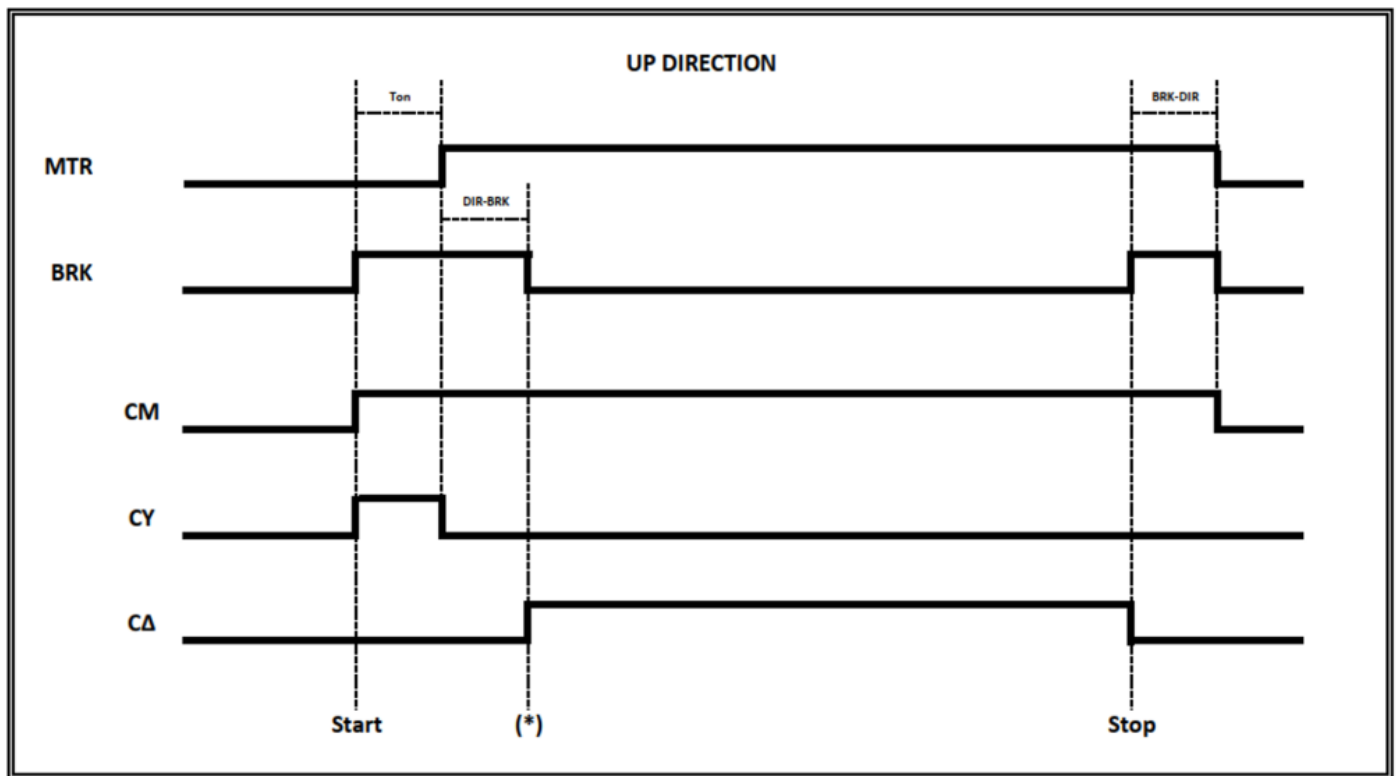
Annex 12 – Timing Diagrams

Installation with Inverter FUJI LM2



Hydraulic Lifts – Motor contactors

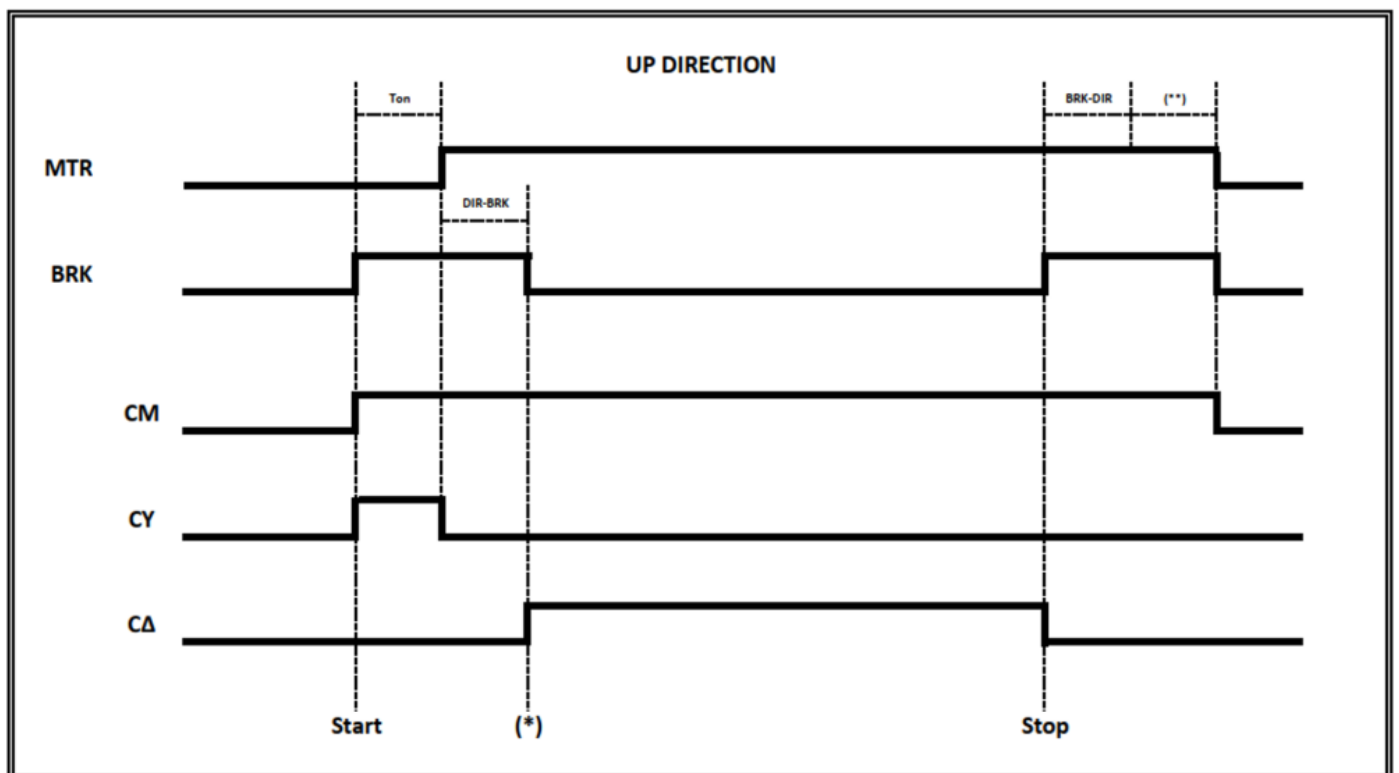
Direct



(T on) = Contactor's Time Activation, check on cco feedbacks

(*) Signal feedback for start Valve UP command

Soft Starter

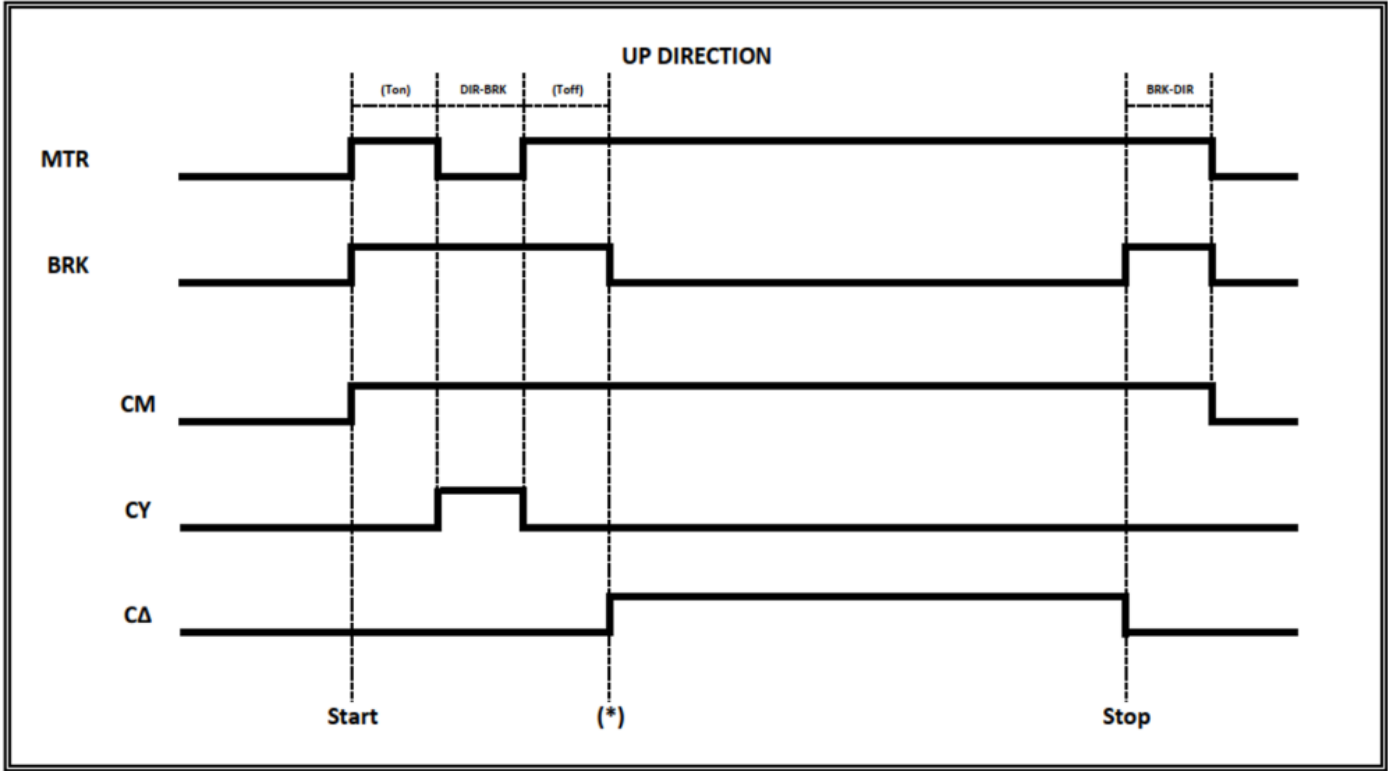


(T on) = Contactor's Time Activation, check on cco feedbacks

(*) Signal feedback for start Valve UP command

(**) Signal feedback from Soft Starter Deceleration (Soft Stop)

Start Delta



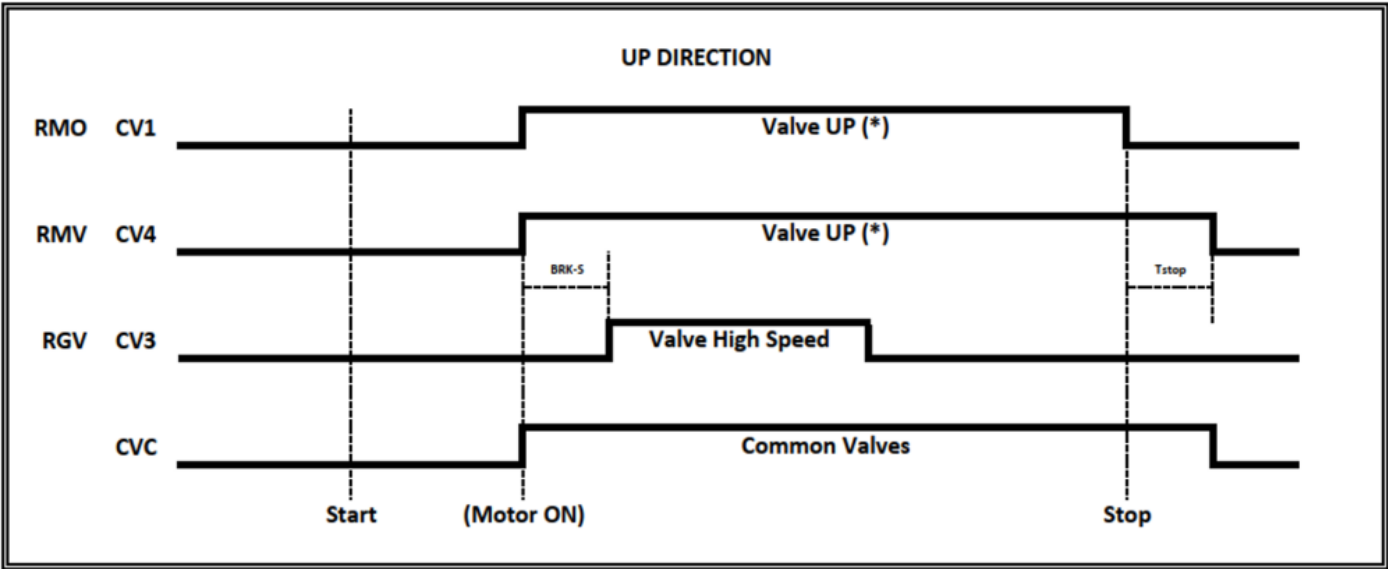
(T on) = Contactor's Time Activation, check on cco feedbacks

(T on) = Contactor's Time Disactivation, check on cco feedbacks

(*) Signal feedback for start Valve UP command

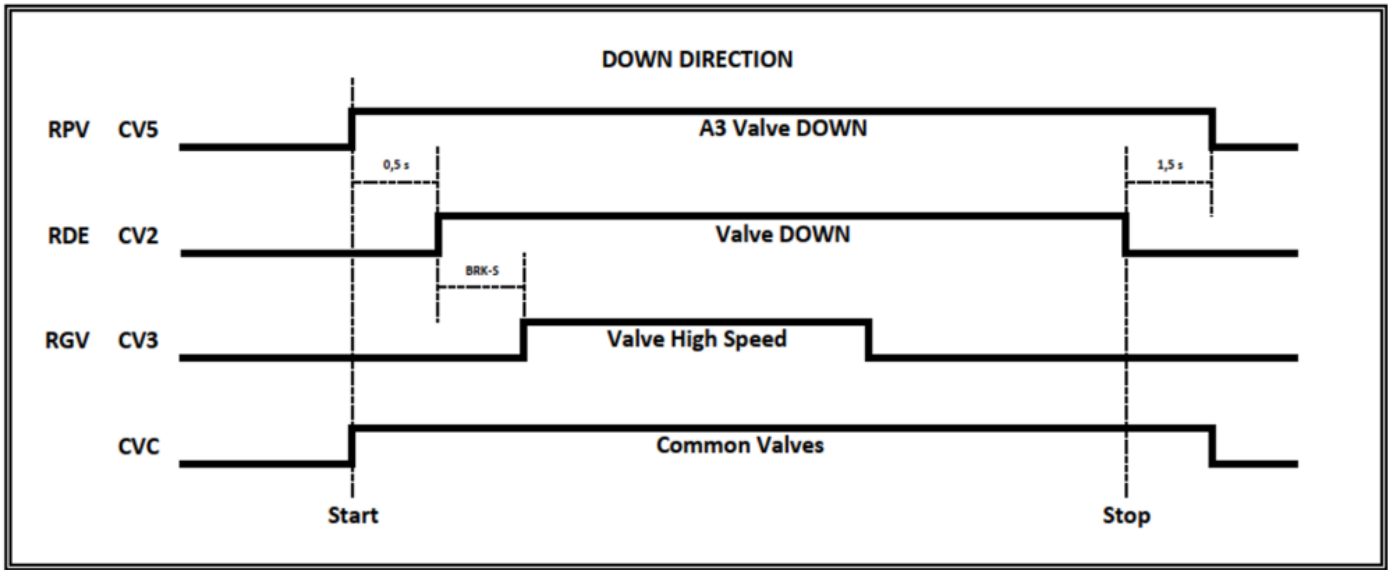
Hydraulic Lift – Valves Contactors / Valve commands

Monitor UCM = 30...39 (2 Valves / 3 Valves / BLAIN EV100 / GMV T3010 / MORIS CM 320)



(*) In case of Soft Stop use CV1 for UP Valve's Contactor

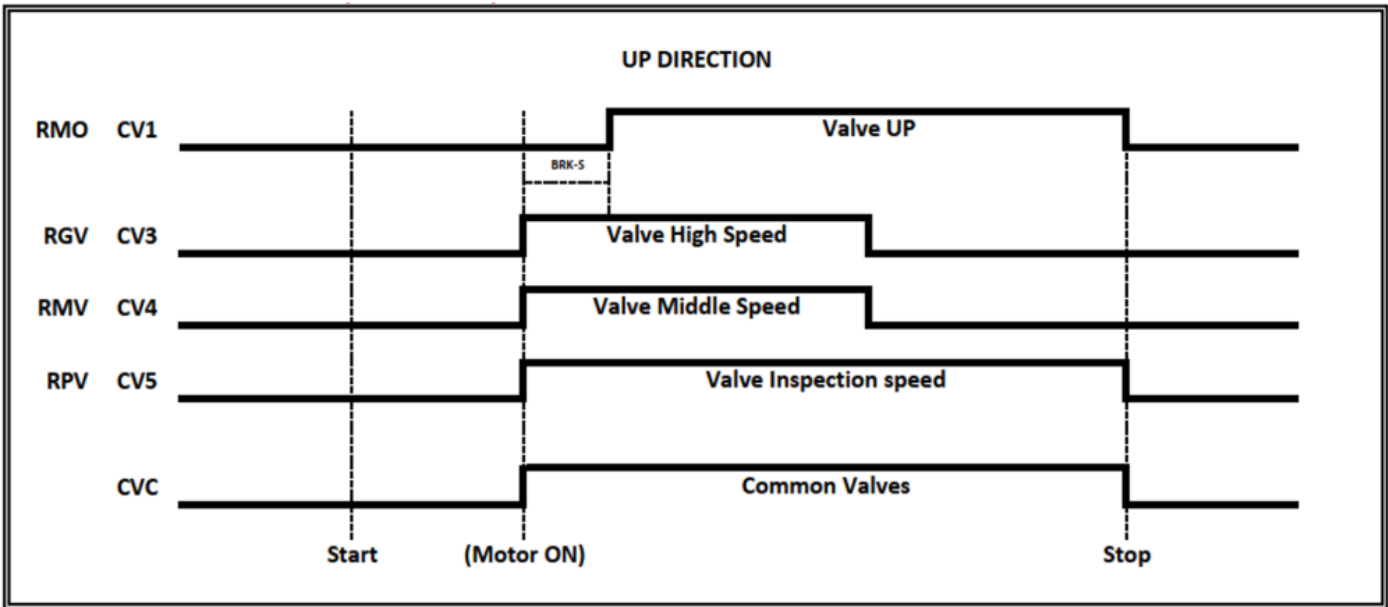
(*) in case of no Soft Stop use CV4 for UP Valve's Contactor – $T_{stop} = BRK-DIR + 1,5s$

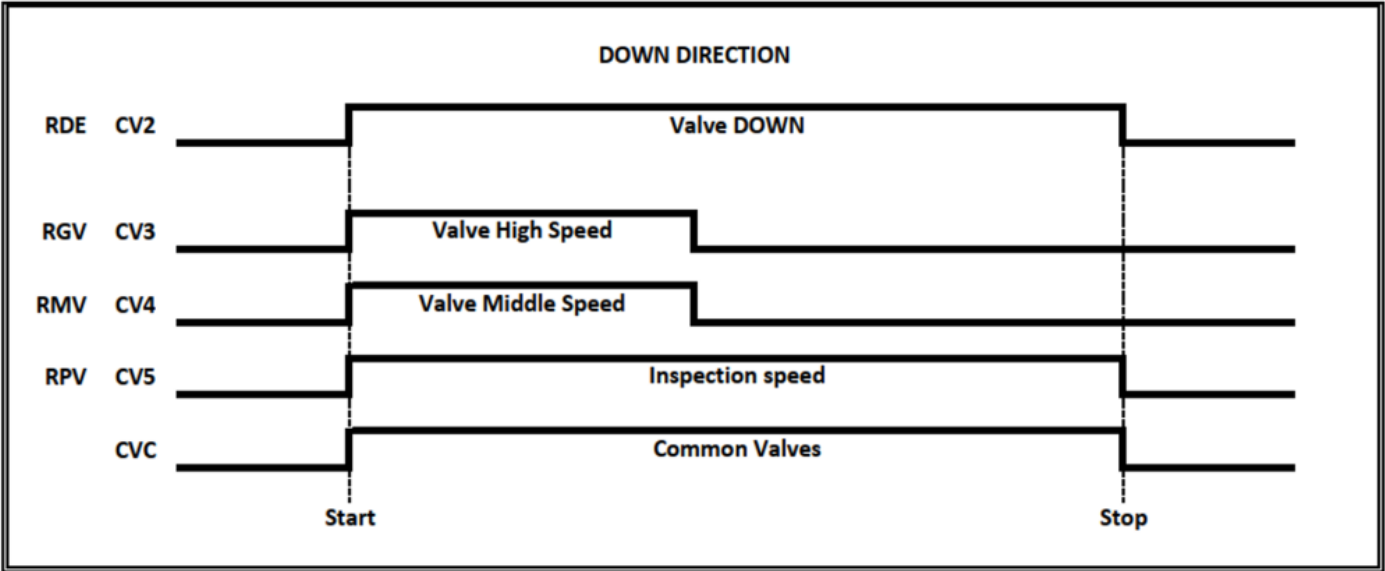


3 Valve => No Double Valve Down test (A3 Valve Down couldn't be present)

3 Valves + A3 => Double Valve Down test

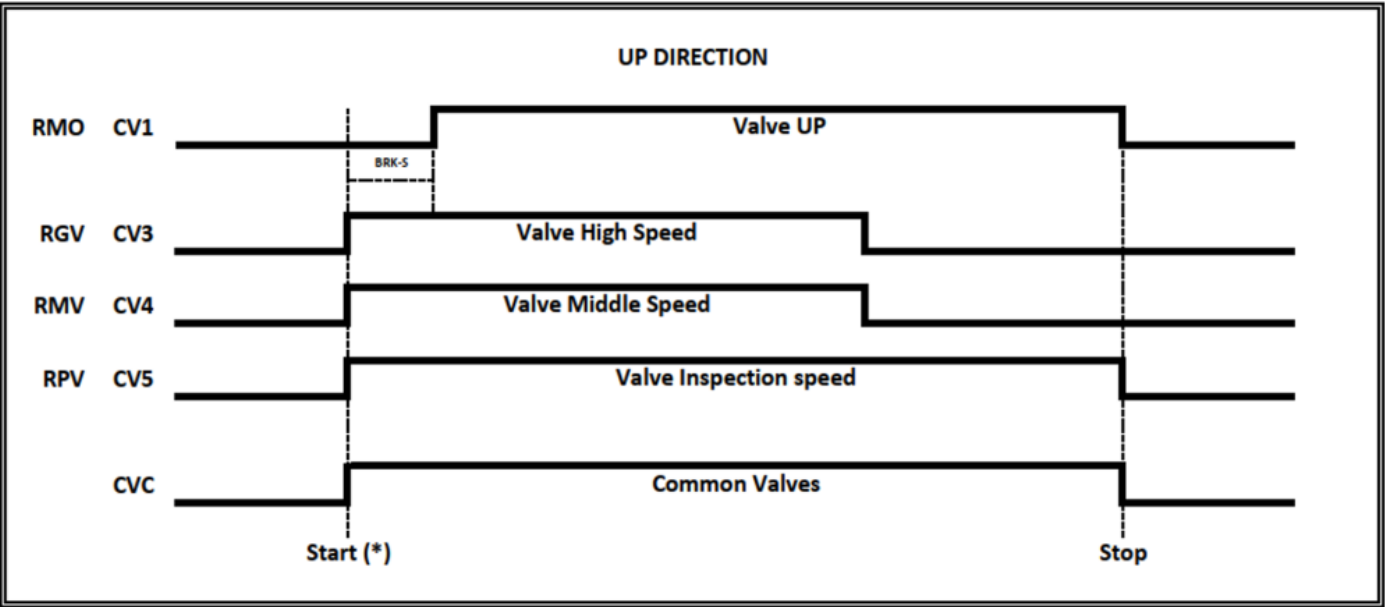
Monitor UCM = 40...44 (GMV NGV)





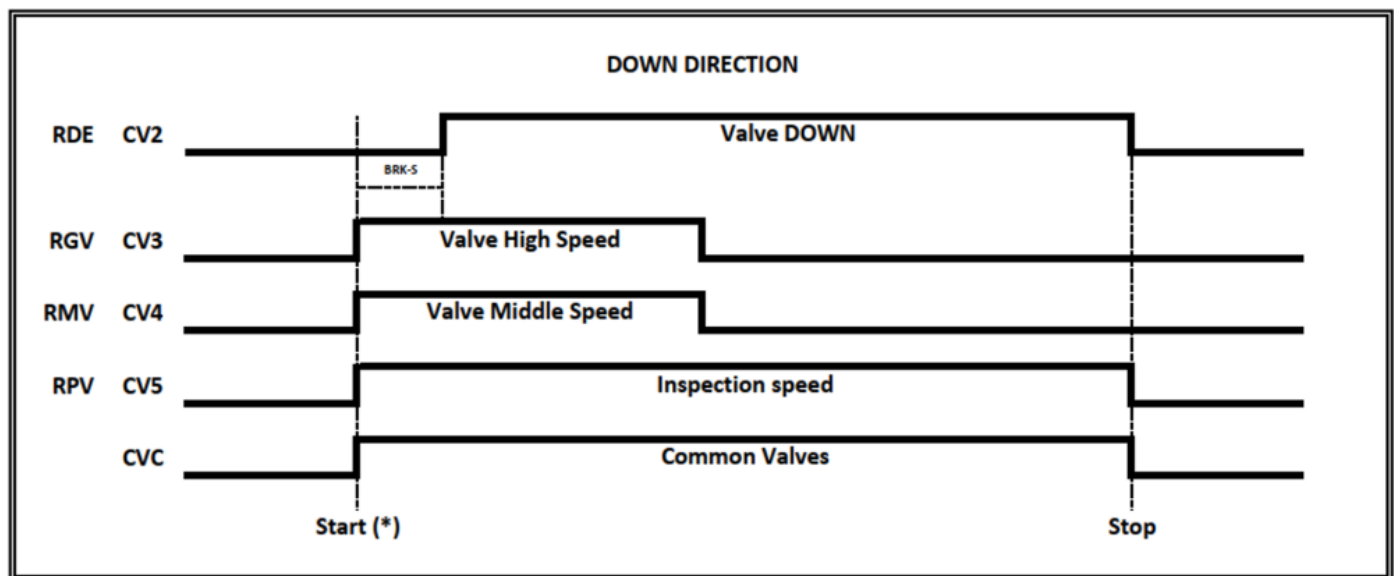
No Double Valve Down test

Monitor UCM = 45...49 (GMV NGV A3)



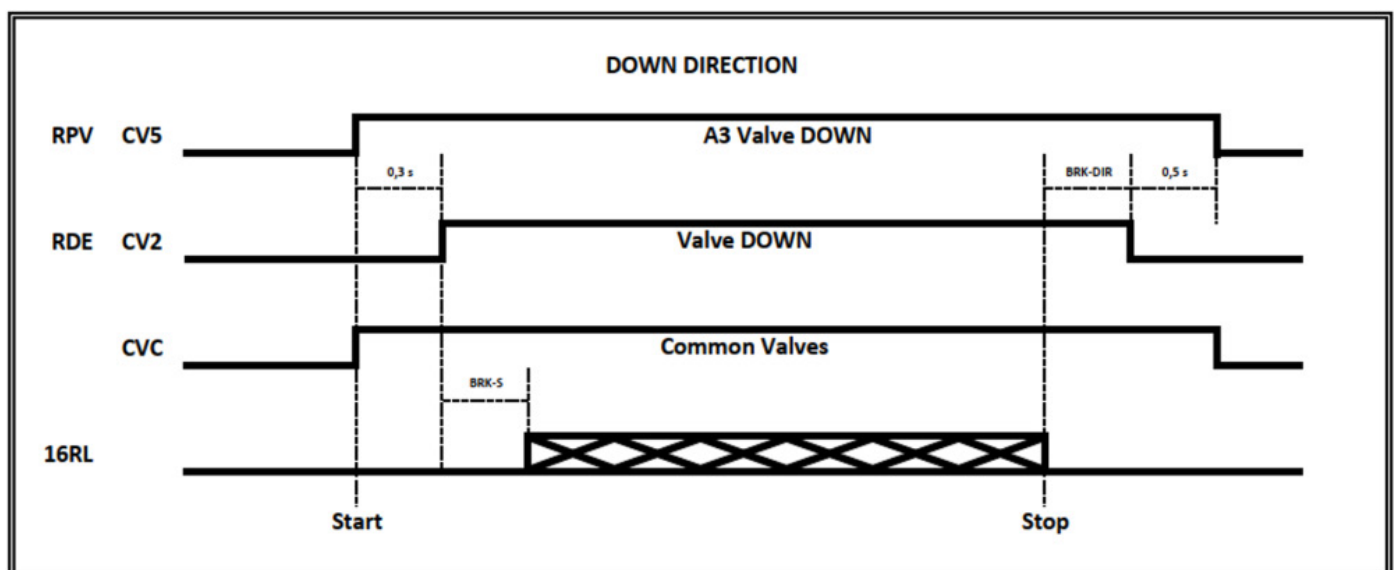
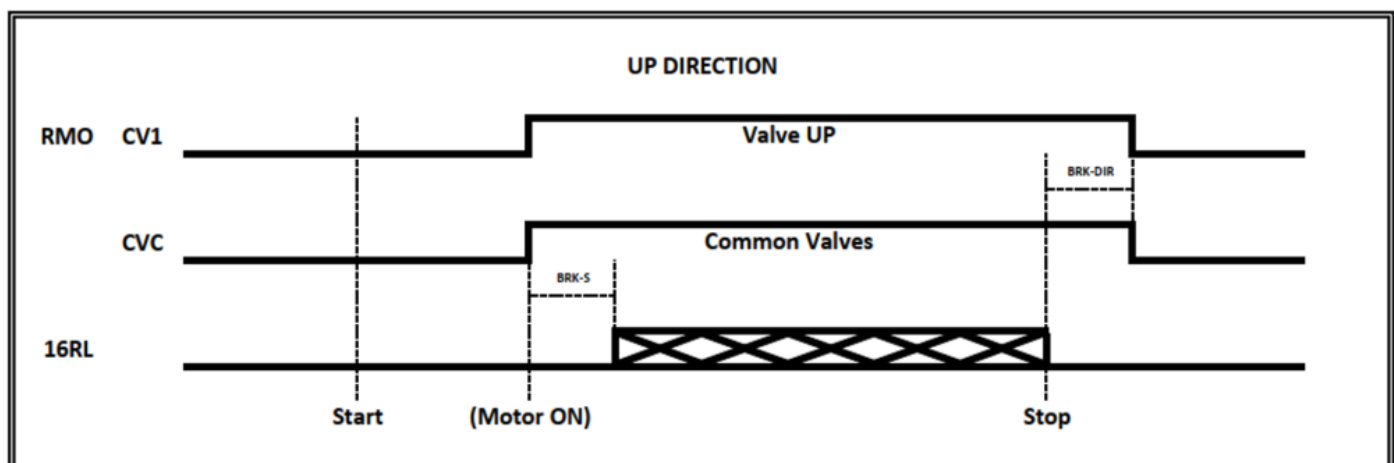
(*) Valve commands starts only if RDY signal is active

Note: Motor Contactors Starts Only With RUN Feedback Signal



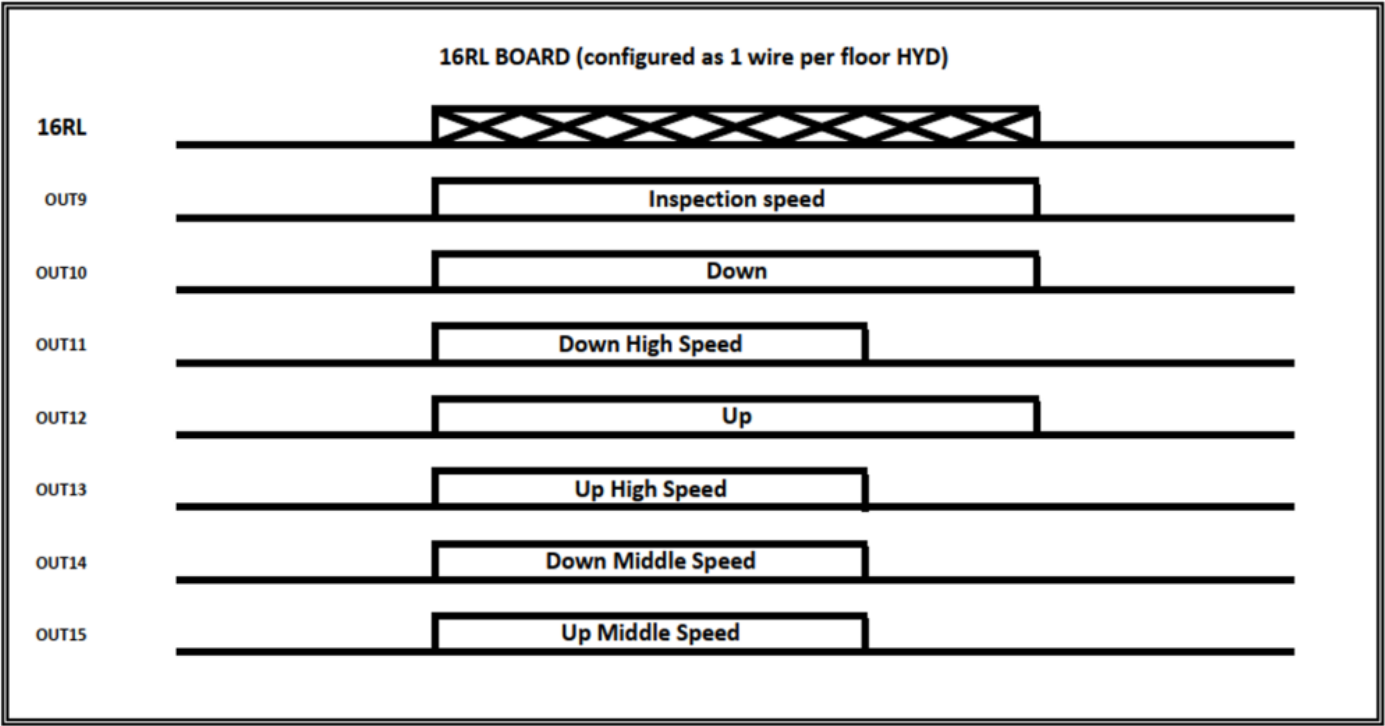
(*) Valve commands starts only if RDY signal is active

Monitor UCM = 50...59 (BUCHER LRV / BUCHER NTA-2 / BUCHER NTA-2 + DSV A3)

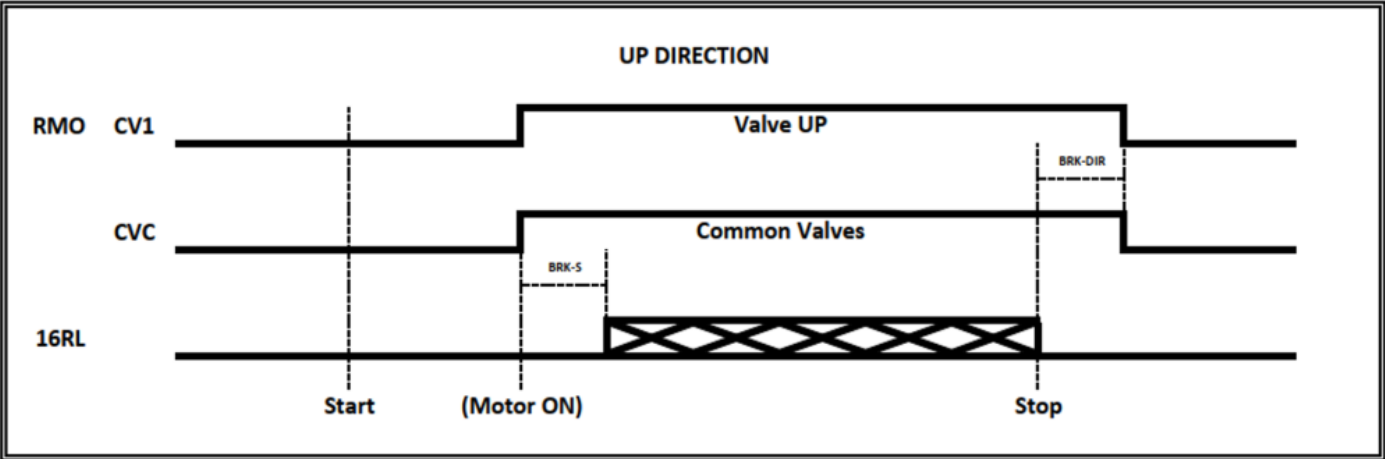


LRV1 + NTA-2 ► No Double Valve Down test (A3 Valve Down couldn't be present)

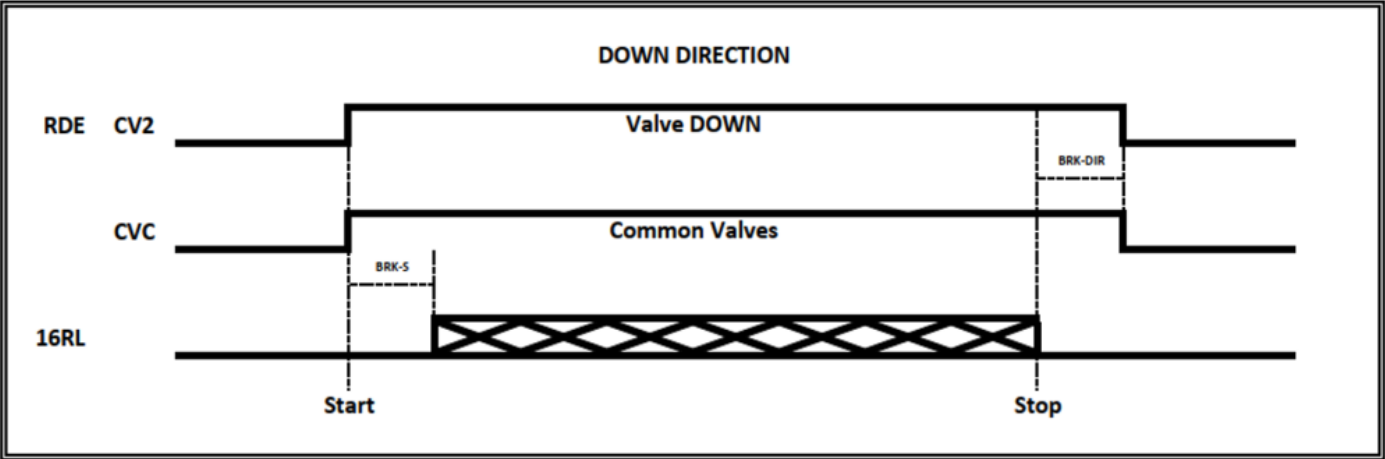
LRV1 + NTA-2 + A3 ► Double Valve Down test



Monitor UCM = 60...64 (BUCHER i-VALVE / BUCHER iCON-2)

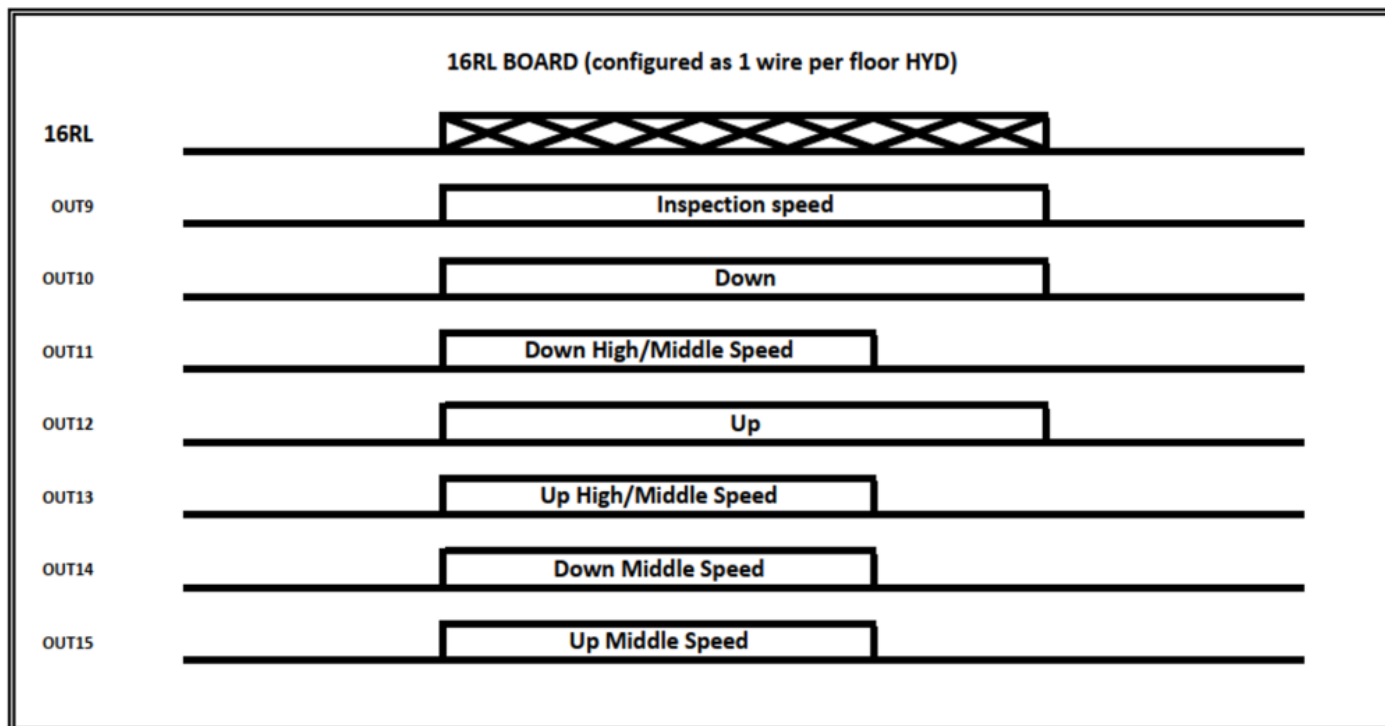


Monitor of Signal + SMA





Monitor of Signal + SMA



Download

You can download the PDF of this page

[DIDO-Pitagora-4.0-English](#) [Download](#)

[DIDO-Pitagora-4.0-Italiano](#) [Download](#)

[DIDO-Pitagora-4.0-Deutsch](#) [Download](#)

[DIDO-Pitagora-4.0-Francais](#) [Download](#)

Updated on 18 Giugno 2021