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SECURLIFT®
Elevator Digital Technology

Installation manual

secur 3

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Introduction

The SECUR 3 modular system allowed our designers to develop innovative and reliable microprocessor-based controllers.
This system assigns to peripheral co-processors the activation of related inputs and outputs. In this application every node of the system is connected by a simple two-wire connection.
The serial communication system which is used between boards in car and in control panel is based on CAN (CONTROLLER AREA NETWORK). The protocol follows the ISO-IS 11898 rules for high speed transmission (over 125 Kbit/sec), and the ISO-IS 11519-2 for low speed transmission (up to 125 kbit/sec).
The CAN network layout is a multi-master. In other words, the unit that needs to send an information takes possess of the bus and send its message, which is received and decoded by the receiving units. If more units need contemporarily the bus for transmission, automatically the highest priority will be assigned.
If one of the verifications gives a negative result the message will be repeated.

This is SECUR 3, a technologically advanced system.

System description

The SECUR 3 system is composed by the combination of the following electronic boards:

- **SEC-3Q**: controller mother board. It is the base of the system, and holds:
  - **SEC-3AUX**: board with auxiliary relay
  - **SEC-3IO**: additional inputs and outputs board (calls, etc.)

- **SEC-3S**: the safety circuit supervision board

- **SEC-3C**: car roof board. It handles the communication between car and controller, and holds:
  - **SEC-3I/O**: additional inputs and outputs board (calls, etc.)

- **SEC-3TRG**: is the COP board; collects all car commands and signalisations and transmit them to SEC-3C board; it may be located both inside COP or in the connection box on car roof

- **SEC-2L**: the landing node board. It handles the landing calls and signalisation, in serial mode, and holds:
  - SEC-2LPI: the driver for position indicators at landing (in serial mode only)

- **SEC-3FDR**: the alarm battery charger and alarm handling.

Technical specifications

BASIC SPECIFICATION

- Modular system up to 32 floors (64 services).
- microprocessor
- CAN (Controller Area Network) serial transmission from controller to:
  - Car, landings, inverter

Interfaces

- Removable user interface for parameter setting and controller diagnostic:
  - SECUR 3 system parameters programming
  - special functionalities (rescue drive, door commands, calls, etc.)
  - fault codes and diagnostic visualisation
  - date/time setting
  - inverter programming and diagniostic
- USB port for SW update and parameters backup
- Serial port for local or remote monitoring

Drives

Hydraulic lift:

- Power units: all
- direct starting, star/delta starting, soft starter

Traction lift:

- Asynchronous motors
- Gearless Synchronous motors
- AC 1 / 2 speed
- V3F open loop
- V3F closed loop

Logic

- Push button
- Down collective, Up collective, Full collective
- Multiplex (up to 4 lift group)

Doors

- automatic, semi-automatic, swing doors
- single, double access
- contemporary or selective door opening
- parking either with opened or closed doors
- door operators type: all

Emergency devices

- manual lowering emergency feature (standard on MRL Gearless installation)
- automatic emergency device for lowering and doors opening
- auto-dialer
- SMS automatic transmission in case of alarms

Signalisation

- 24 VDC – 1W per output
- Gong / voice announcer in 4 languages (standard) – other languages upon request
- car position indication: 1 wire per floor, 7 segment, dot matrix, LCD binary
- Other signalisation:
  - car busy/coming
  - car here
  - car call registered
  - landing call registered
  - car direction
  - hall lanterns - gong
  - overload
  - out of service
  - fire recall/fireman's drive

Protections

All SECUR 3 input/outputs are protected against:

- over-voltage (up to 125 VDC)
- electro-magnetic interferences (according to EN standards)
- motor temperature protection: thermistors or thermal relay
- over current – short circuit
- lack/reverse phase
- max. run time

ELECTRICAL SPECIFICATIONS

Mains supply:

- standard: 220V, 230V, 380V, 400V – 3 phase - 50 Hz.
- optional: single phase 220V, 230V, 240V, 3 phase 208V, 415V – 50/60Hz.

Brake supply:

- standard: 200 VDC
- optional: any other voltage

Valves supply:

- standard: 48 VDC
- optional: all

Safety circuit with optocouplers:

- standard: 230 VAC – 48VDC
- optional: 110VAC

Shaft positioning system

- bi-stable/monostable magnetic switches
- absolute encoder by magnetic band

Options

- overload and full load function
- short floor functions
- car / landing priority
- car light – fan timer
- fire recall
- advance door opening
- fireman's drive
- floor access by code or iButton
- out of service
- remote monitoring

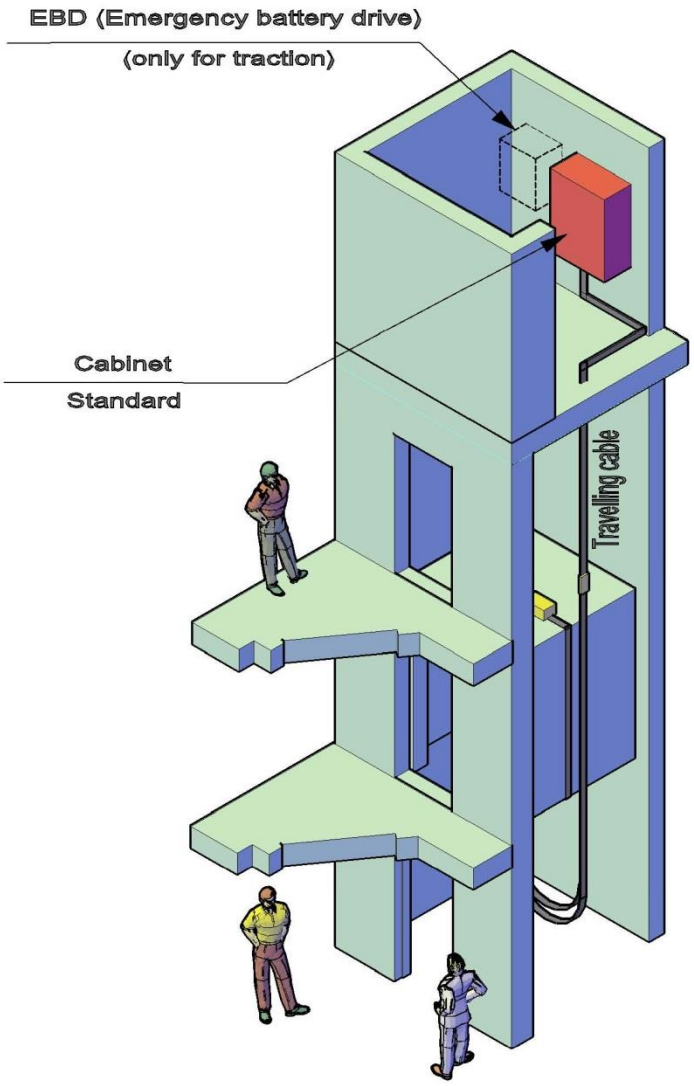
Norms

- EN 81-1; EN 81-2
  - A3 amendment
- EN 81-20; EN 81-50
- EN 81-21
- EN 81-70
- 95/16/CE
- Legge 13 – DM 236
- EN 81-72
- EN 81-73
- EN 81-80
- CE marking - 2014/33/UE directive
- EN 50081-1 electromagnetic emissions
- EN 50082-2 electromagnetic immunity

Topographic drawings

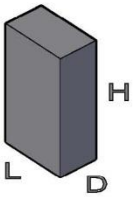
Cabinet layout

"MR" Type:
"Top Machine room"



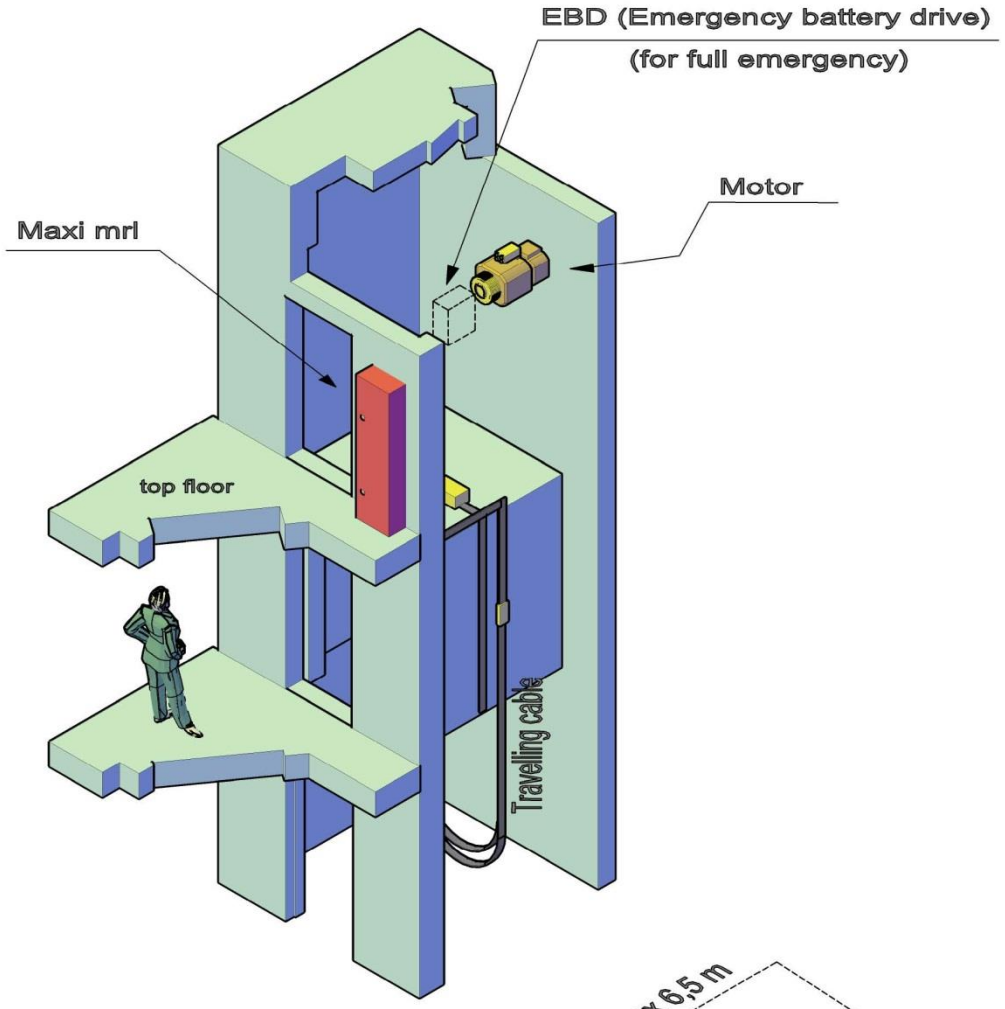
OPTIONS:
Cabinet MIDI / MINI

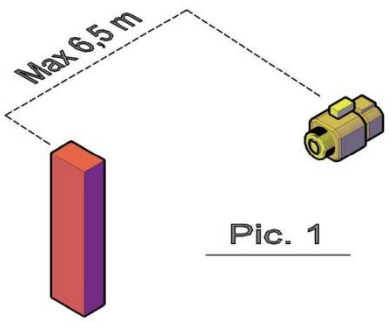
Special cabinet at floor level with meausures:
H = 1600 mm - L = 800 mm - D = 400 mm



Cabinet Layout

"MRL" Type:
"machine room less" top / bottom





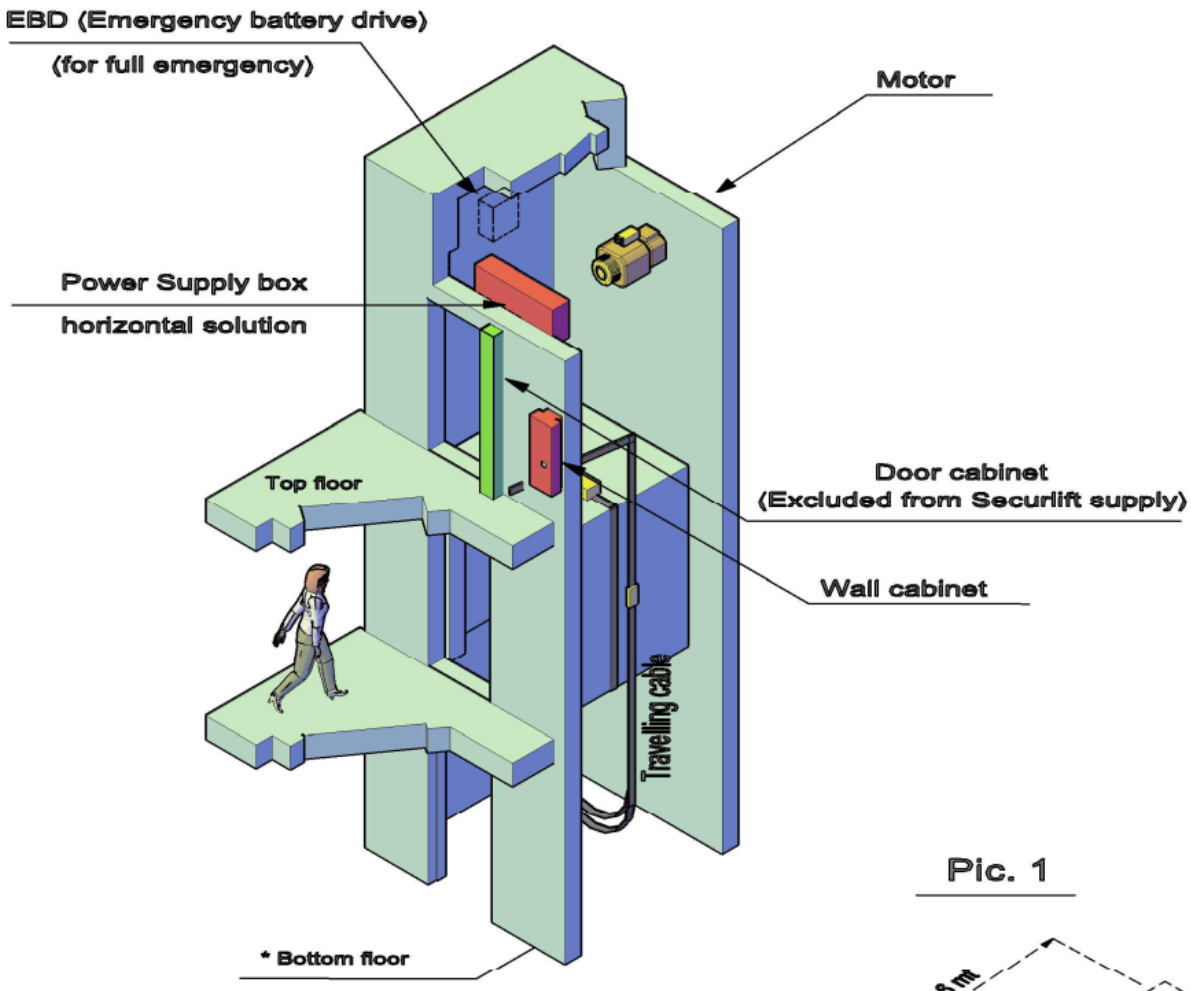
Attention:
respect the maximum distance
of the electrical connections = 6,5 m

Pic. 1

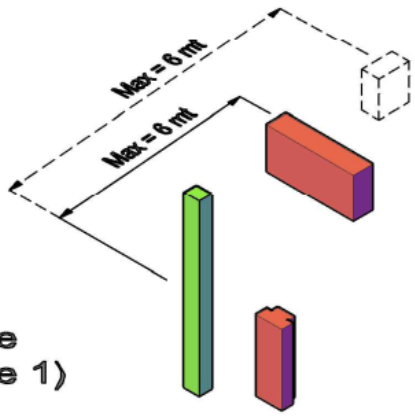
Cabinet layout

MRL Type:

"Machine room less" top / bottom *



Pic. 1

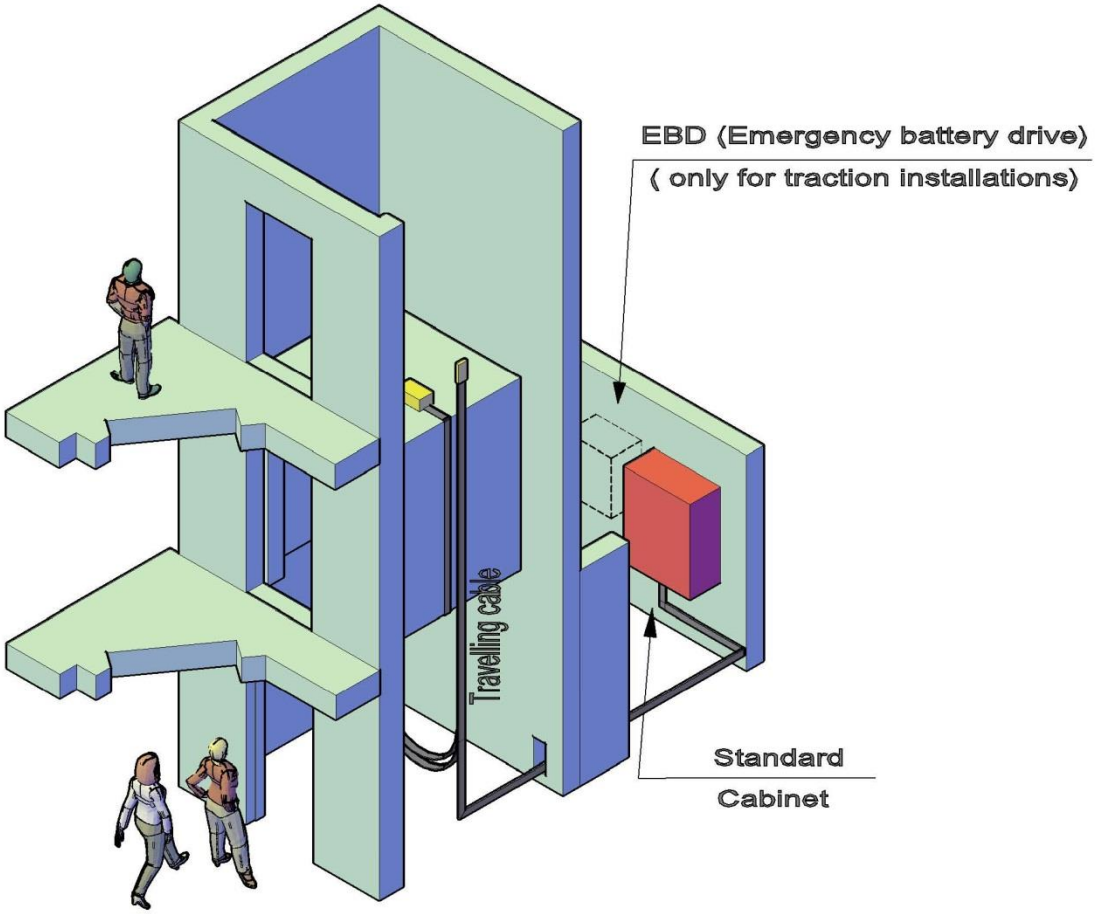


Choose from:
- Wall cabinet (Securlift supply)
- Door cabinet (Customer supply)

respect the maximum distances for the electrical controller connection (Picture 1)

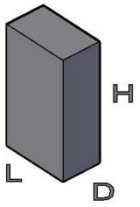
Cabinet layout

"MR" Type:
"Bottom machine room"



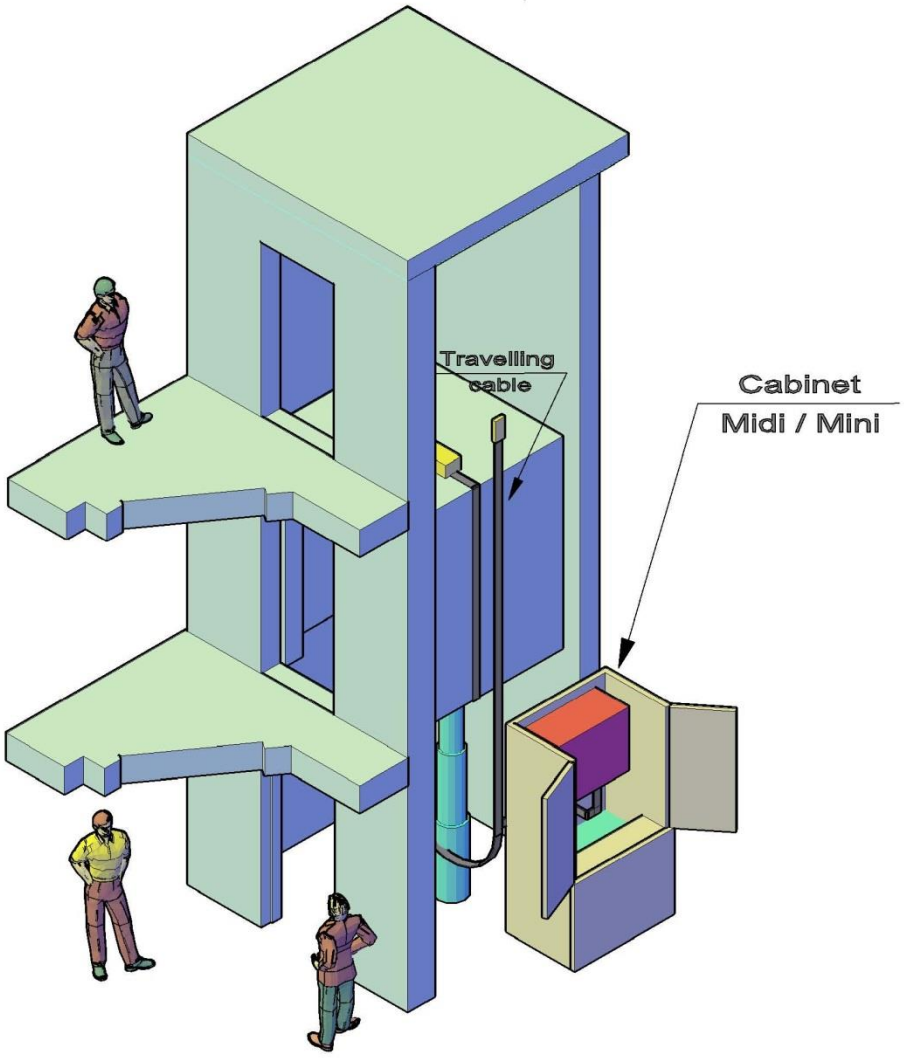
OPTIONS:
Cabinet MIDI / MINI

Special cabinet at floor level with meausures:
H = 1600 mm - L = 800 mm - D = 400 mm

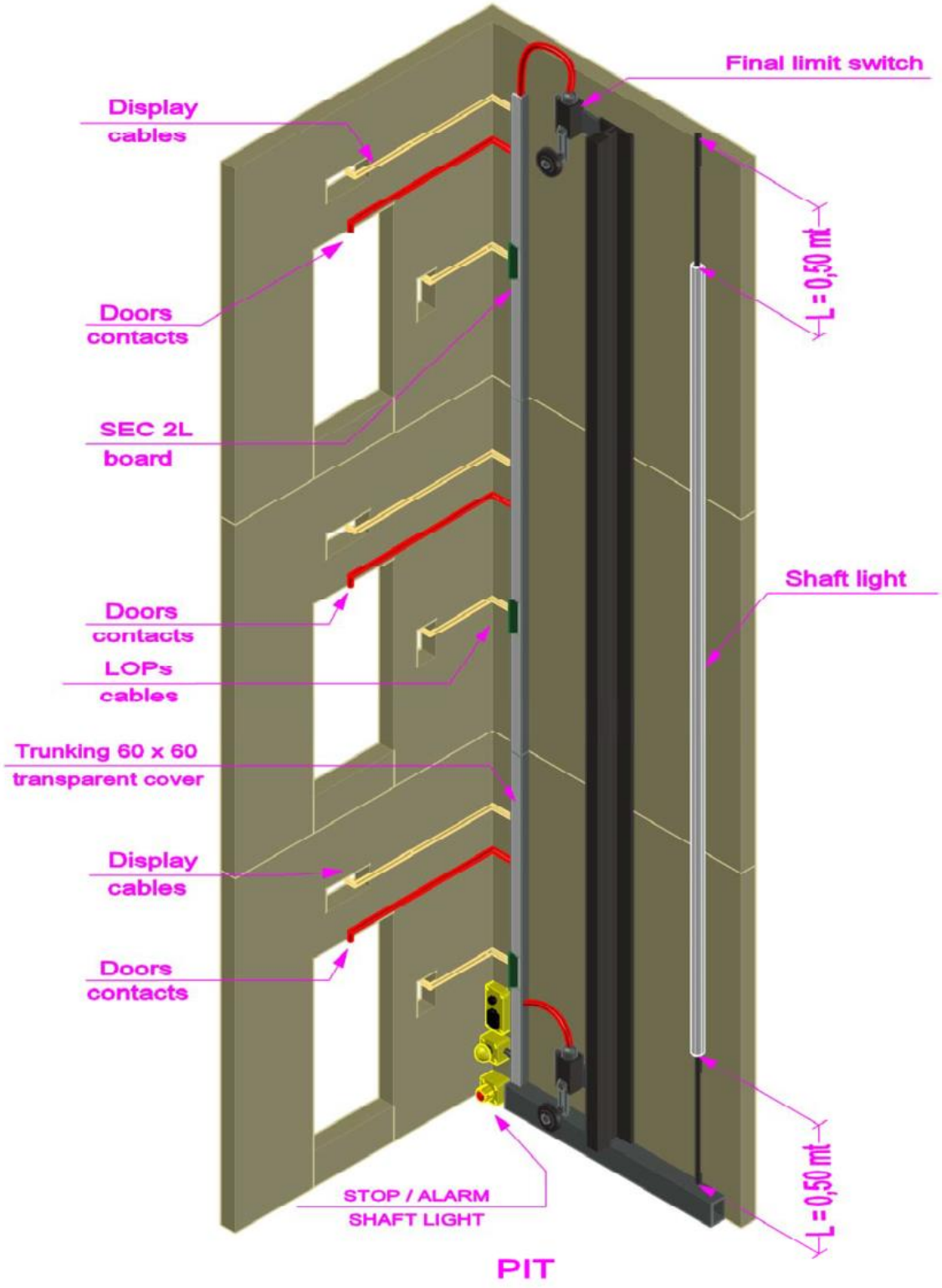


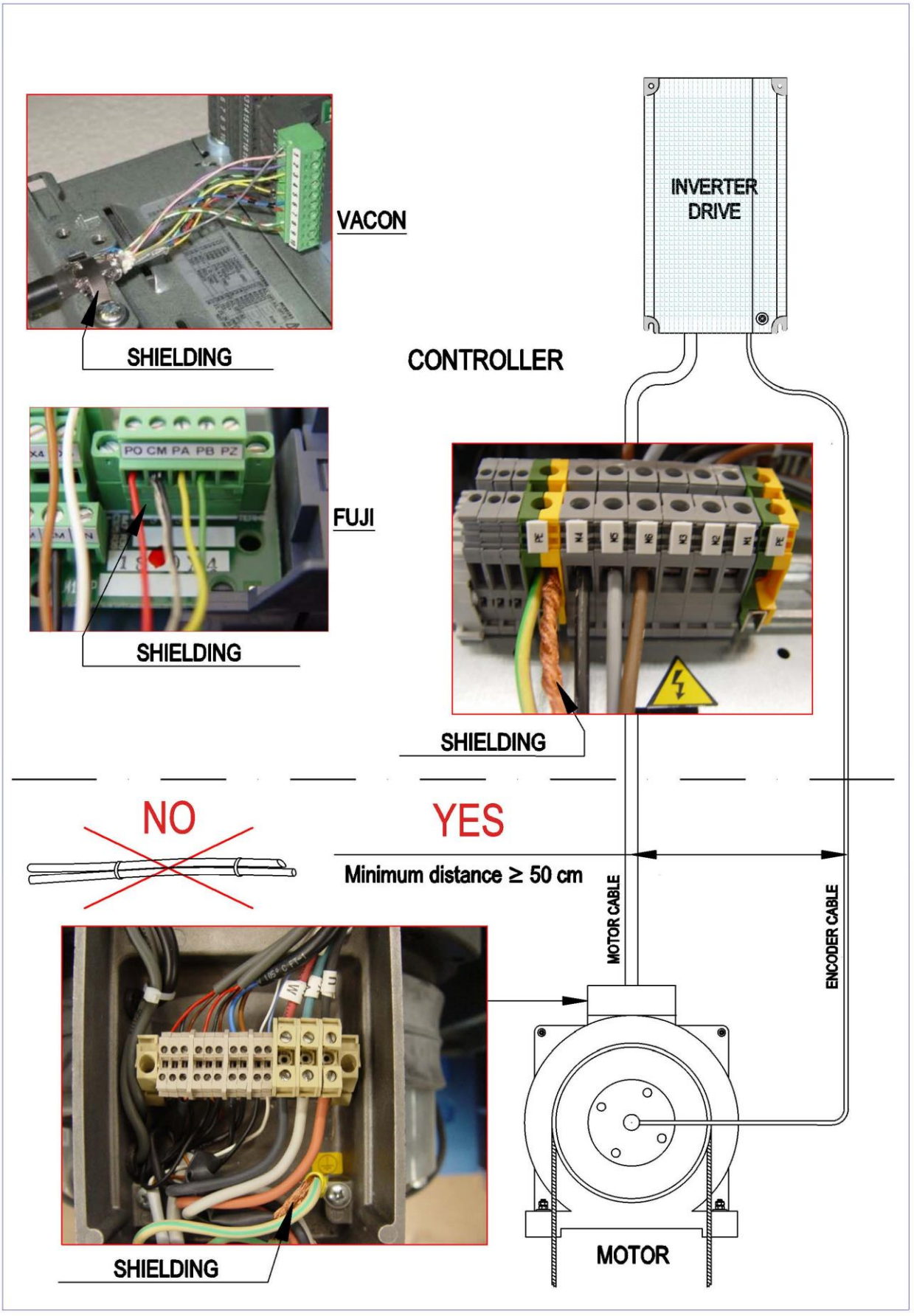
Cabinet layout

"MRL" Typ:
"Controller in power unit cabinet"



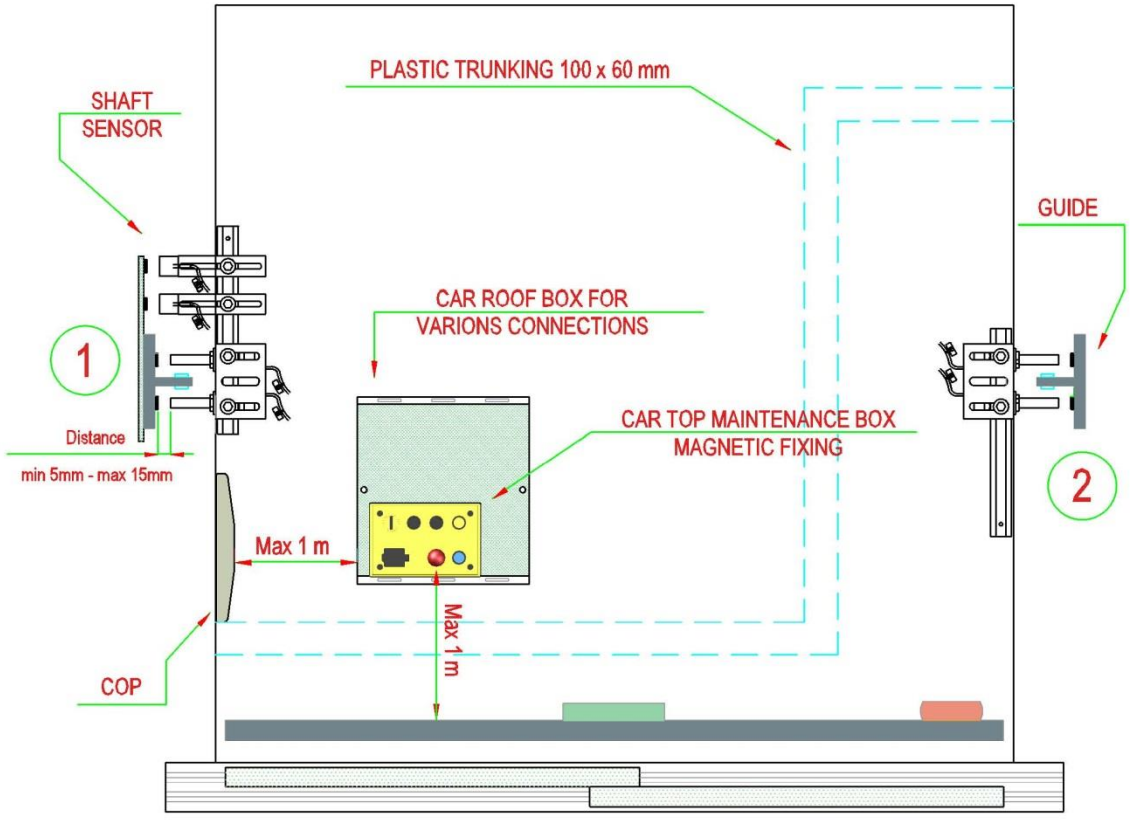
OVERVIEW CONNECTIONS



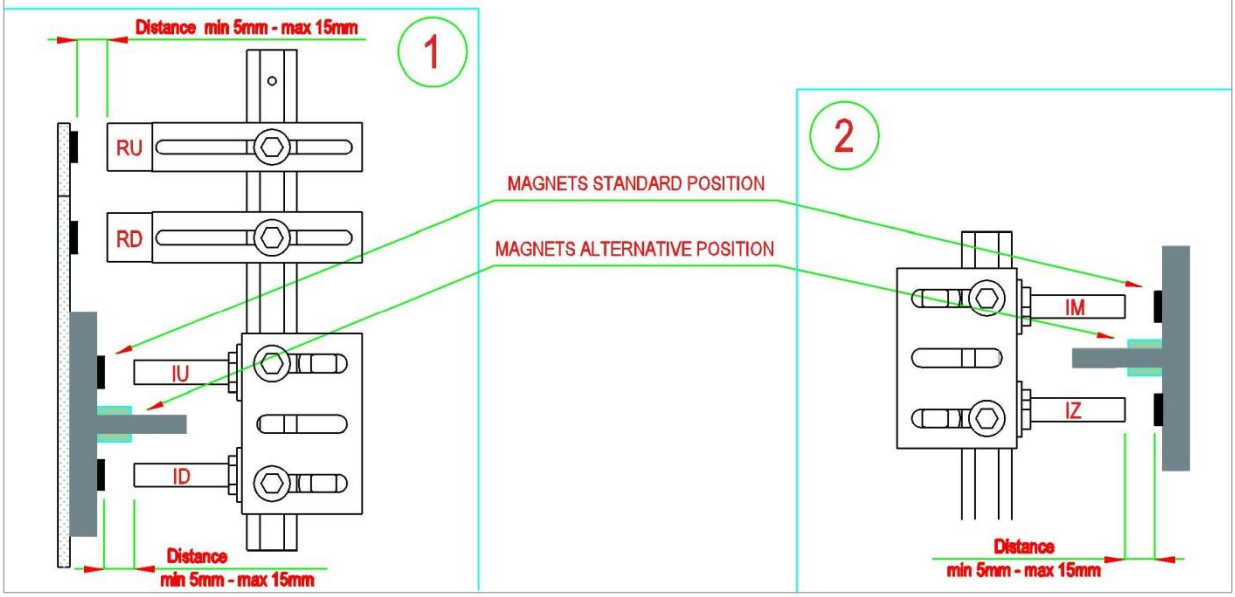

VACON
SHIELDING
INVERTER DRIVE
CONTROLLER
PO CM PA PB PZ
FUJI
SHIELDING
SHIELDING
NO
YES
Minimum distance ≥ 50 cm
MOTOR CABLE
ENCODER CABLE
SHIELDING
MOTOR

CAR ROOF

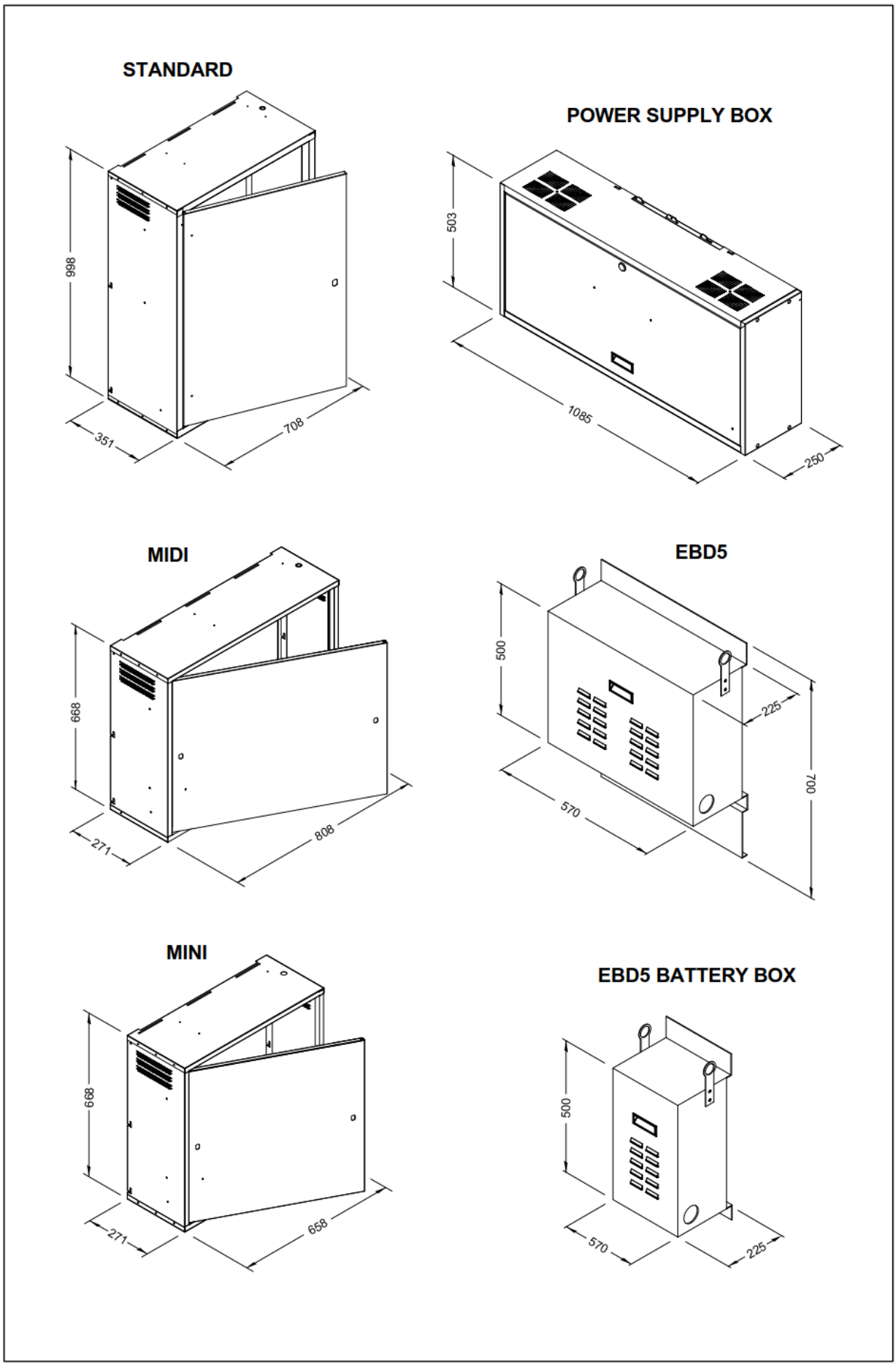
EXAMPLE OF COMPONENTS LAYOUT

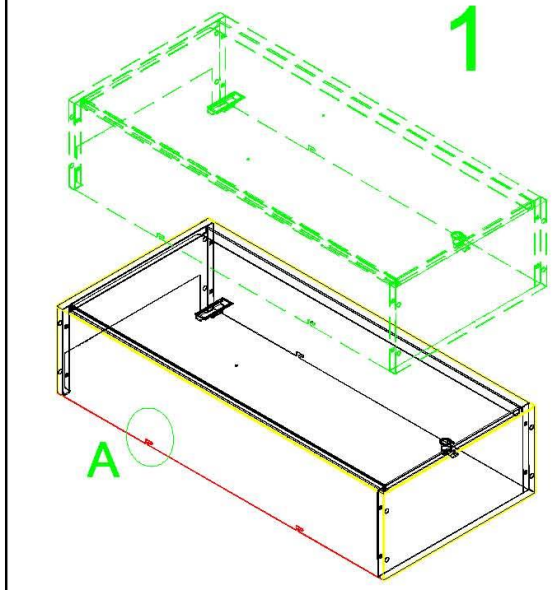


POSITION THE BOX IN ORDER TO EASILY CONNECT THE CABLE FROM THE COP



Cabinets


STANDARD
998
351
708
POWER SUPPLY BOX
503
1085
250
MIDI
668
271
808
EBD5
500
225
700
570
MINI
668
271
658
EBD5 BATTERY BOX
500
570
225

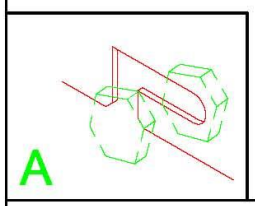


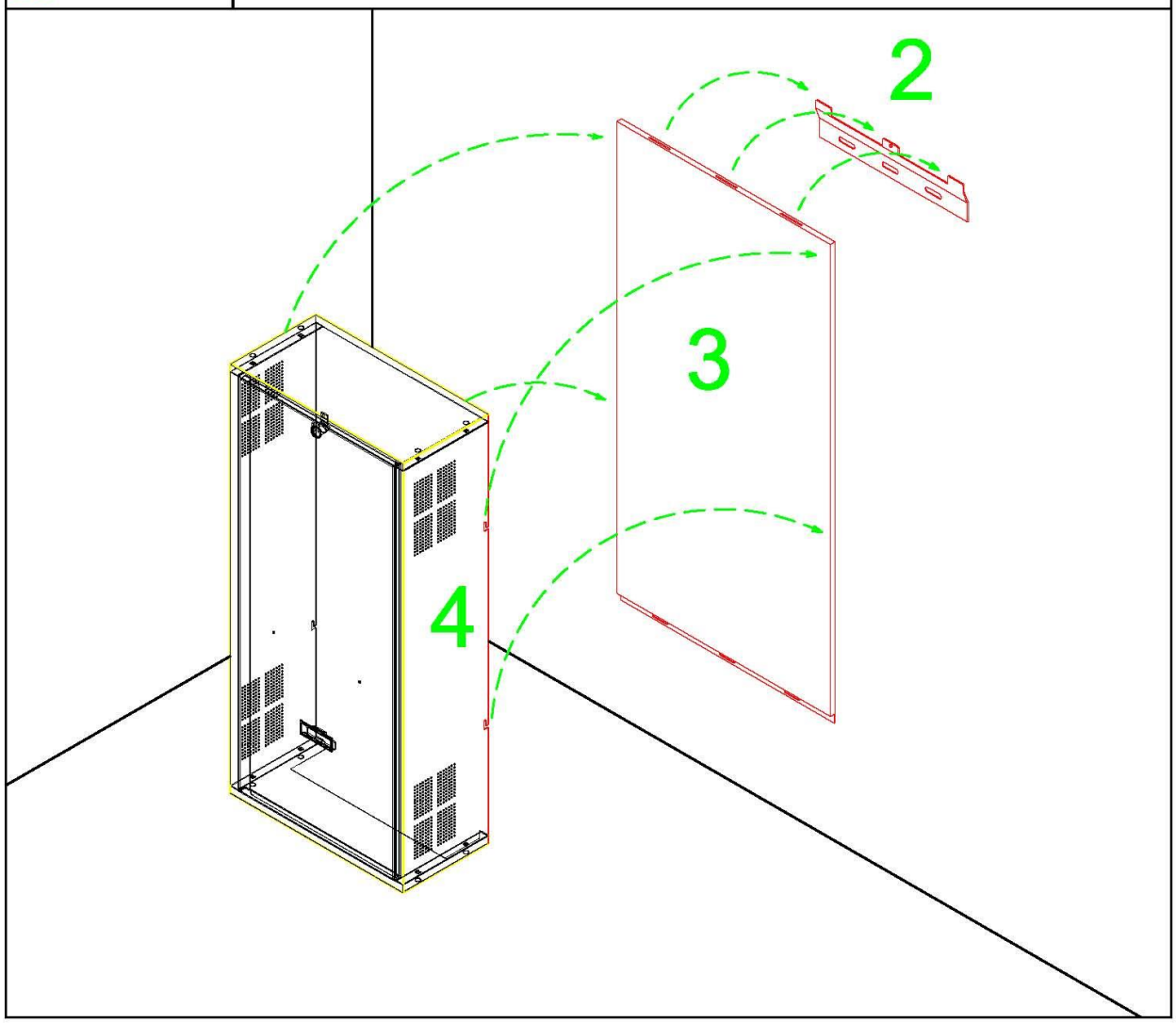
1) ALLENTARE LE 4 VITI LATERALI E RIMUOVERE LA COPERTURA (FIG. 1)
LOOSE THE 4 SIDE SCREWS AND REMOVE THE COVER (PICT. 1)
DIE 4 SEITLICHE SCHRAUBEN LOCKERN UND DIE BEDECKUNG WEGNEHMEN (BILD 1)
DESSERRER LES 4 VIS LATERALES ET ENLEVER LA COUVERTURE (FIG. 1)

2) MONTARE LA STAFFA DI FISSAGGIO MEDIANTE TASSELLI (FIG. 2)
FIX THE HANGER WITH THE BOLTS (PICT. 2)
DIE SPANNBÜGEL MONTIEREN MIT DIE DÜBEL AUFÄNGEN (BILD 2)
FIXER LE SUPPORT AVEC LES TAMPONS (FIG. 2)

3) AGGANCIARE LA PIASTRA COMPONENTI (FIG. 3)
HOOK THE PLATE WITH COMPONENTS (PICT. 3)
DIE PLATTE AUFÄNGEN (BILD 3)
ACCROCHER LA PLAQUE AVEC LES COMPOSANTS (FIG. 3)

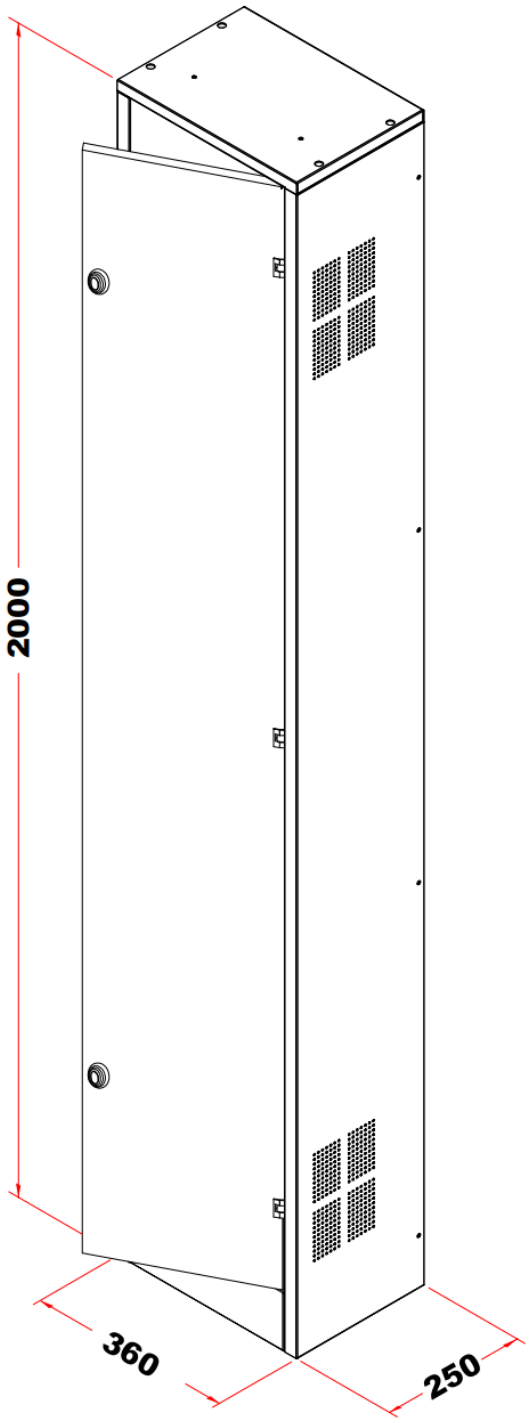
4) ASSEMBLARE LA COPERTURA (FIG. 4)
ASSEMBLE THE COVER (PICT. 4)
DIE BEDECKUNG MONTIEREN (BILD 4)
ASSEMBLER LA COUVERTURE (FIG. 4)





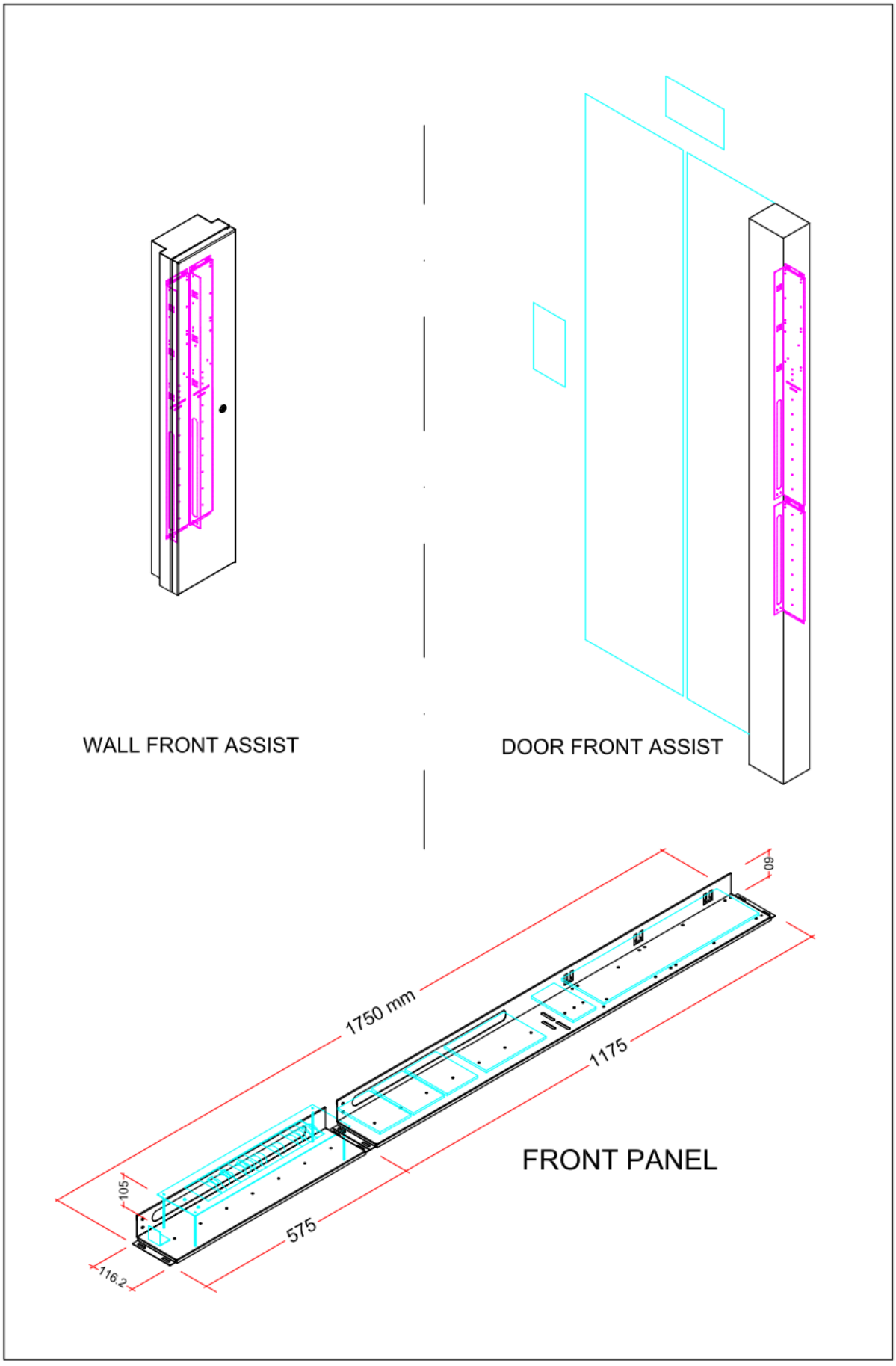
Apertura sinistra
Left opening
Öffnung links
Ouverture gauche
Открытие слева

Apertura destra
Right opening
Öffnung rechts
Ouverture droite
Открытие справа

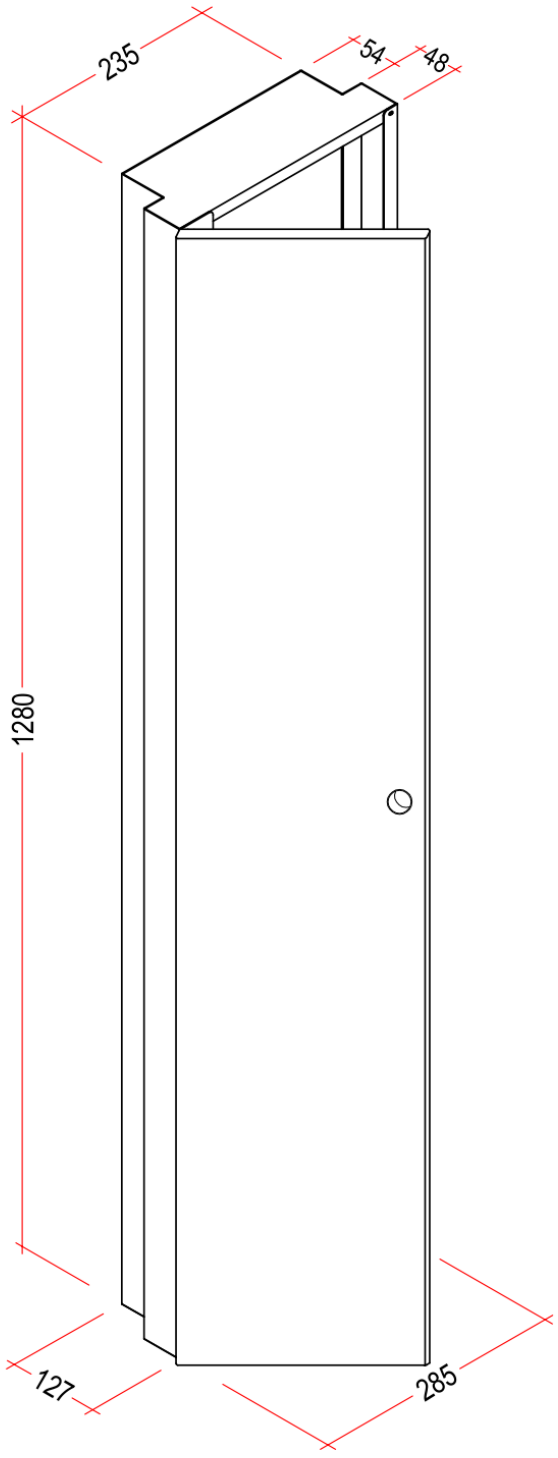


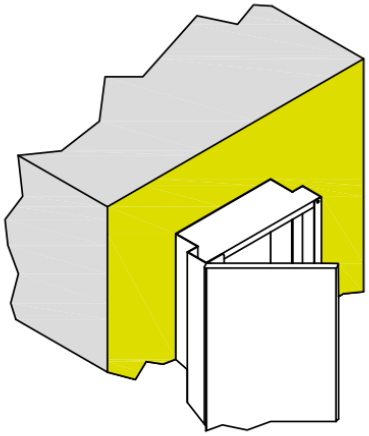
PIXI

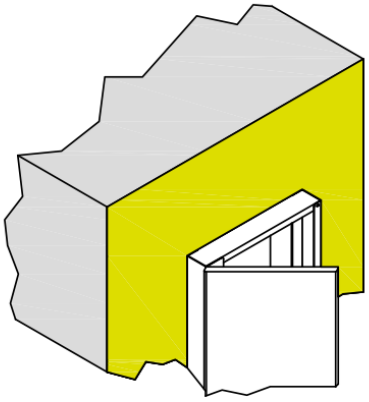
MAXI


WALL FRONT ASSIST
DOOR FRONT ASSIST
1750 mm
1175
575
105
116,2
60
FRONT PANEL

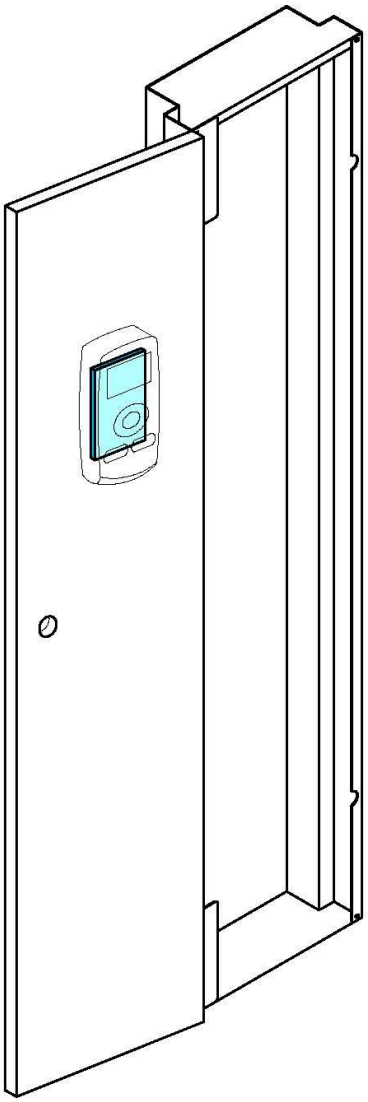
WALL CABINET

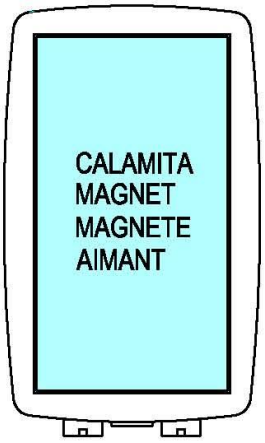


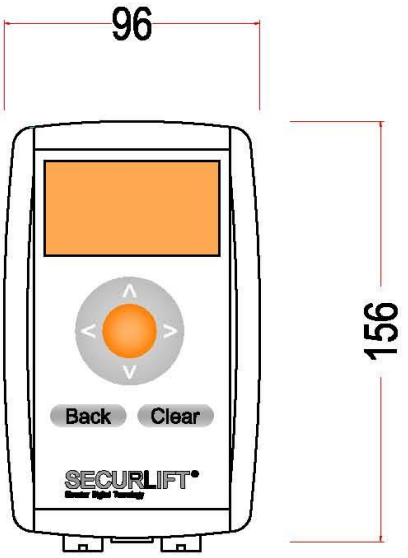




TASTIERINO
KEYPAD
TASTENFELD
CLAVIER







APPLICAZIONE SU ARMADI CON MAGNETE

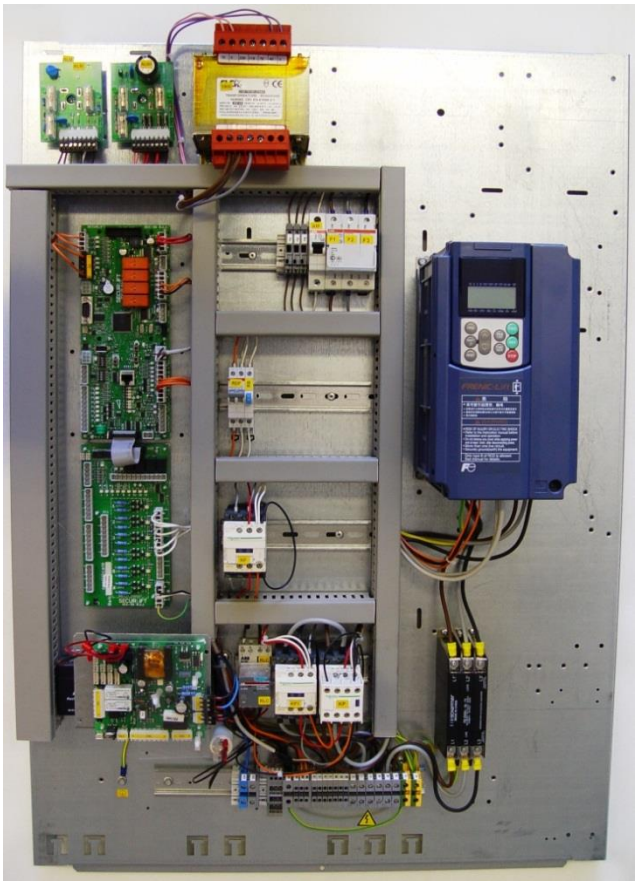
APPLICATION ON CABINETS WITH MAGNET

EINBAU AUF SCHRÄNKE MIT MAGNETE

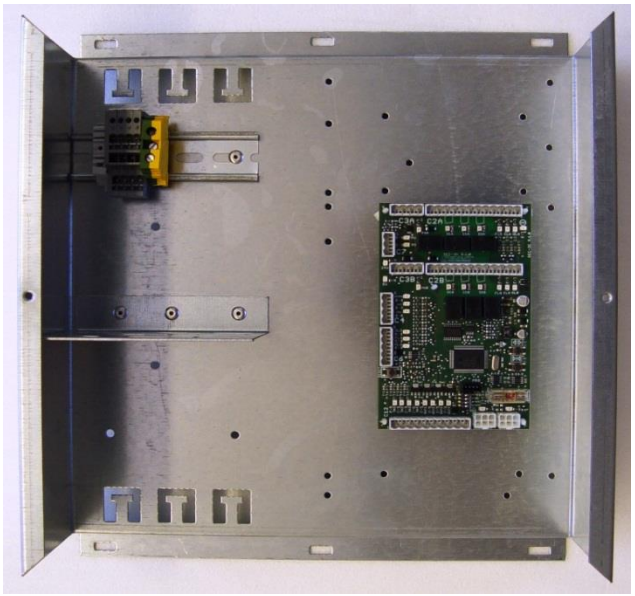
APPLICATION SUR LES ARMOIRES AVEC AIMANT

Internal layout

Control panel



Car roof connection box



Preliminary test

In order to perform preliminary test a TEMPORARY command box has to be connected to controller, strictly following the below diagram.

! DO NOT USE THE PRE-WIRED INSPECTION BOX DELIVERED WITH THE CONTROLLER !

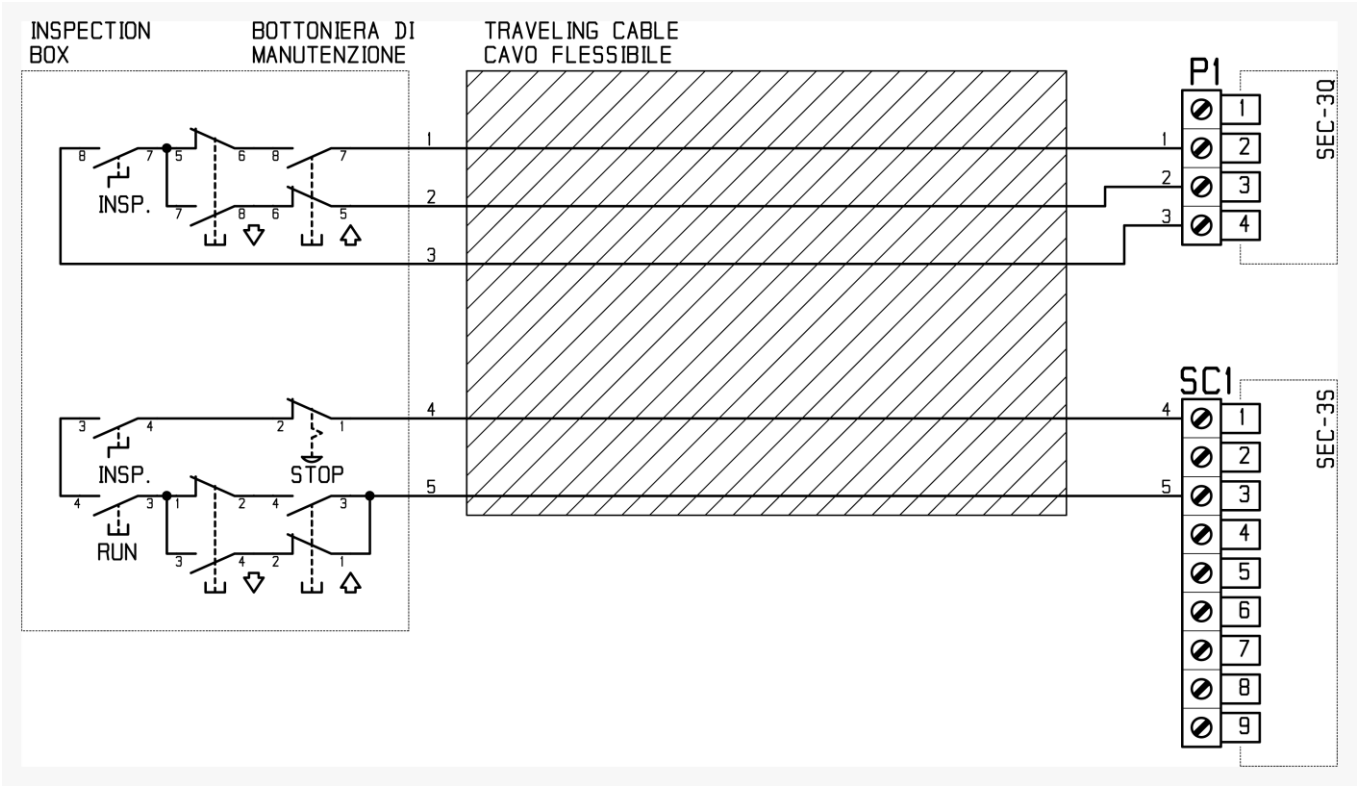
Do not install the car roof box (board SEC-3C)

Referring to installation electric drawings, connect following circuits:

a) Mains supply - terminals M1,M2,M3 (ref. page 1)
b) Motor supply – terminals M4,M5,M6 (U,V,W – ref. page 1)
c) Brake supply (if traction lift) – terminals 50 e 51 (ref. page 4), or BR+ e BR- (ref. page 22)
d) Valves supply (if hydraulic lift) – (ref. page 4)
e) temporary command box, by a suitable travelling cable
   ATTENTION: do not use the pre-wired inspection box
f) motor thermal protection (ref. page 1)
g) all the ground/earth connections to all devices
h) bridge out connection related to non-existing devices (ref. page 3)
i) remove wire between P1/1 – P1/4 on controller board (SEC-3Q)

Following verifications must be performed:

j) check all supply voltages
k) check that controller display shows **RECALL**
l) check that safety circuit led's on board SEC-3S (SUPPLY, SHAFT, CAR , SWING DOORS, CAR DOORS, LOCKS) are lit while pressing RUN and UP or DOWN buttons on the command box.



ATTENTION
After the preliminary test is finished, restore all connection to the original condition, carefully checking the safety circuit.

Insulation test

Preliminary operation

- Insulation test have to be performed after complete and correct functional test of the lift have been made.
- Position the car between two floors and check that all doors are closed.
- Check that AM circuit breaker (on control panel) is closed.
- Switch off the mains (both power and light supply).
- Remove all yellow/green wires from earth bar, except those connected to metal parts and to earth disperser.
- Disconnect yellow/green wire from terminal 100, in controller and in car connection box.
- If safety chain with alternating current disconnect the yellow/green wire from terminal 0 of secondary coil of TRM transformer.
- If safety chain with direct current disconnect the yellow/green wire from terminal 5 or 8 of SEC-2ALM board.
- Disconnect yellow/green wire from terminal 100 in the emergency battery drive SEC-3EBD
- Remove connector P8 on SEC-3Q board.
- Remove connector CAL on SEC-3FDR board.
- Disconnect connector ISE inside car roof box
- Remove all connections from inverter (if provided).
- Remove all connections between controllers (if multiplex lift group) and perform complete test procedure on every single lift.

Insulation measures

By a 500V insulation tester, check resistance values between terminals according following table. Measured values (in megaOhm) must be higher than 0.5 MΩ.

terminals	POWER CIRCUIT **M1** **M4 (U)**	LIGHT CIRCUIT **LC/L** **LV/L**	* DOOR CIRCUIT **MPA/1**	ALARM CIRCUIT **CAL/6**	SAFETY CIRCUIT **SQ1/3** **SQ2/9** **100**
EARTH **(PE)**	>0,5	>0,5	>0,5	>0,5	>0,5
* POWER CIRCUIT **M1; M4**		>0,5	>0,5	>0,5	>0,5
LIGHT CIRCUIT **LC/L; LV/L**			>0,5	>0,5	>0,5
DOOR CIRCUIT **MPA/1**				>0,5	>0,5
ALARM CIRCUIT **CAL/6**					>0,5

(*) Note: with 230VAC or mains voltage door operator supply do not run the test between POWER CIRCUIT and DOOR CIRCUIT.

Restore all modified connections when finished.

DZSM - Door Zone Safety Module test

When ADO (advance door open) and/or ACL (re-levelling) are provided, a Safety Module is fitted inside the controller. The safety module allows the car movement inside door zone with door opened.

In order to test the device proceed as follows:
Verify controller software revision = 02.52D or further
Verify parameter 02.16 = Yes [DZSM Control]

<u>normal functional test</u>

- place the car at bottom floor and keep the door open
- move the car by the manual lowering button or by opening the brake
- pump or motor starts, and car is moved until it reaches the floor level

1st channel missing simulation	2nd channel missing simulation
• keep the door open • remove wire from terminal **S11** on CS AR-95 module	• keep the door open • remove wire from terminal **S22** on CS AR-95 module

- display shows **[DZSM ERROR!] and the system goes OSS (Out of service)**
- move the car by the manual lowering button or by opening the brake
- motor or pump **do not start**, and car remains stopped

In order to set the lift back in service restore connections, then switch off/on the mains, then press Reset on board SEC-3Q, bring the car back to floor, then press and hold Clear for 10 sec.

1st channel sticking simulation	2nd channel sticking simulation
• bridge out terminals **S11** with **S12** on CS AR-95 module	• bridge out terminals **S21** with **S22** on CS AR-95 module

- register a call
- at arrival to destination floor display shows **[DZSM ERROR!] and the system goes OSS (Out of service)**

In order to set the lift back in service restore connections, then switch off/on the mains, then press Reset on board SEC-3Q, press and hold Clear for 10 sec.

Run Time Supervision test

Hydraulic lift

- manually block the car movement (e.g. disconnect vanes, close oil tap, disconnect power unit)
- register a call
- car doesn't move, and after the set time in 01.07 display shows **Run Time Superv**.
- system goes OSS (Out of service)

In order to set the lift back in service restore connections, restore original value in parameter 01.07, press and hold Clear for 10 sec.

Traction lift

- enter programming mode and set parameter 01.07 = 20 sec.; exit and save modification

with FUJI inverter	**with VACON inverter**
• set in Fuji inverter parameters C10 e C11 at 0.00Hz	• set in Vacon inverter parameters P.2.2.7 and P2.2.11 at 0.00Hz)

- register a call and, after starting, remove SC3 connector on SEC-3S board
- car doesn't move, and after the set time in 01.07 display shows **Run Time Superv**.
- system goes OSS (Out of service)

In order to set the lift back in service restore original value in the inverter, then press and hold Clear for 10 sec.

Overspeed governor remote test.

Test instruction

- insert **TEST** shunt in **OST** connector
- register a call
- after starting press **TEST** button; the remote test coil will be energized and the governor will trip.

Reset instruction

- if governor has a reset coil, insert RESET connector in OST connector and press TEST button
- move the car toward opposite direction to restore the safety gear, by using the RDF function

Test for PFB – LK overspeed governor

Test instruction

- separe **OST** connectors (male/female) and insert **TEST** connector into **OST** socket
- switch down RDF selector, press and hold RB button and run up or down by pressing button ▲ (S1) or ▲ (S2)
- press **TEST** button; then overspeed governor will be engaged
- **Reset instruction**
- remove connector TEST and connect back **OST** connectors
- press TEST button
- move the car in RDF mode, in opposite direction, in order to release the safety gear

Bypass switch test (EN 81-20 only)

- Check parameter 02.38 = Yes [EN81-20 Enable]

- **Pos. 0** - Disabled
- **Pos. 1** – Landing swing doors contacts bypass
- **Pos. 2** – Car doors contacts bypass
- **Pos. 3** – Landing doors locks bypass

Ref. electrical drawings, page 3

Check:

- If bypass switch is not in pos. 0, normal run of the elevator is not possible.
- If bypass switch is activated (pos. 1, pos. 2, pos. 3), in order to move the car in inspection mode car door position input C12/2 on SEC-3C board must be enabled (closed)
  With car double entrance input C12/4 as well must be enabled – ref electrical drawings, page 11
- During movement in inspection mode, with bypass switch activated, an audible signal (beep) and a flashing signal are emitted from car bottom

Final Limit Switches test

Traditional shaft (magnets and/or motor encoder)

Upper final limit switch FLS:U

- register a call for top floor.
- after deceleration (car at low speed) disconnect SC3 connector on SEC-3S board
- car will continue its run until upper final limit switch

In order to set the lift back in service restore connections, then lower the car below limit switch, then press and hold Clear for 10 sec.

Lower final limit switch FLS:D

- register a call for bottom floor.
- after deceleration (car at low speed) disconnect SC3 connector on SEC-3S board
- car will continue its run until lower final limit switch

In order to set the lift back in service restore connections, then raise the car above limit switch, then press and hold Clear for 10 sec.

Absolute shaft (ELGO Limax2)

Upper final limit switch FLS:U

- place the car at the penultimate stop
- enter programming, set parameter 02.19 (Inspection Top) = TEST.
- save and exit.
- on SEC-3Q board set dip-switch SW2/ 1 - DOOR - to **ON** (a beep will sound in controller and in car).
- register a call to top floor
- after deceleration car will continue its run until upper final limit switch

In order to set the lift back in service restore parameter **02.19 = NO**, restore **SW2/ 1 - DOOR - to OFF**, then lower the car below limit switch, then press and hold Clear for 10 sec., then press RESET on SEC-3Q board.

Lower final limit switch FLS:D

- place the car at second stop
- enter programming, set parameter 02.19 (Inspection Top) = TEST.
- save and exit.
- on SEC-3Q board set dip-switch SW2/ 1 - DOOR - to **ON** (a beep will sound in controller and in car).
- register a call to bottom floor
- after deceleration car will continue its run until lower final limit switch

In order to set the lift back in service restore parameter **02.19 = NO**, restore **SW2/ 1 - DOOR - to OFF**, then raise the car above limit switch, then press and hold Clear for 10 sec., then press RESET on SEC-3Q board.

Absolute shaft (ELGO Limax3CP - SAFE)

Upper final limit switch FLS:U

• make a call and position the car at the penultimate stop
• enter programming, set parameter **07.21 = TEST FLS**, save and exit
• on the SEC-3Q board move the dip-switch **SW2 / 1 - DOOR - to the ON position** (acoustic signal in the cabin and in the machine room)
• make a call to the last stop
• the car will pass the last stop and continue at low speed up to upper final limit switch point, and stop there
• move the car below the upper final limit switch by using RDF.

Lower final limit switch FLS:D

• make a call and position the car at the second stop
• make a call to the first stop
• the car will pass the first stop and continue at low speed to lower final limit switch point, and stop there

To restart, restore parameter 07.21 = NO, put the dip switch SW2 / 1 back to OFF, move the car above lower final limit switch, press CLEAR for 10 seconds, press RESET on the SEC-3Q board

EN 81-20 – A3 amendement

Functionality test of the brake monitoring

- **For traction elevators with double brake microswitch**

This procedure is intended to be applied on systems with FUJI drives only.

CONDITIONS TO START THE TEST: ELEVATOR INSTALLED AND WORKING CORRECTLY

TEST INSTRUCTION:

1. Make sure that the brake monitoring is activated, by checking that the parameter 02.31 is set to "2brake"
2. Test of brake 1:
    a. Register a call by the SEC-3KBD keypad
    b. During the drive, remove wire from terminal P14/1 (or terminal V3) on SEC-3AUX board (in order to simulate a failure in brake 1).
    c. The drive must complete normally. After arrival at destination the elevator will be set OUT OF SERVICE and error message "ERR:BRK1 STOP" appears on the display
    d. Make sure that no calls are accepted anymore.
    e. Reconnect wire to terminal P14/1(or terminal V3)
    f. Reset the system by pressing CLEAR button on the keyboard until the error message is cleared.
3. Test of brake 2:
    a. Register a call by the SEC-3KBD keypad
    b. During the drive, remove wire from terminal P14/1 (or terminal V5) on SEC-3AUX board (in order to simulate a failure in brake 1).
    c. The drive must complete normally. After arrival at destination the elevator will be set OUT OF SERVICE and error message "ERR:BRK1 STOP" appears on the display
    d. Make sure that no call is accepted anymore.
    e. Reconnect wire to terminal P14/1 (or terminal V5)
    f. Reset the system by pressing CLEAR button on the keyboard until the error message is cleared.

Note: if the test is performed while the car is at the floor, the error message is shown, but the system is not set out of service

The test must be done before the activation of the elevator for the public and during the periodical checks.

Functionality tests of the control device of the correct operation of two hydraulic valves in series

This procedure applies only to systems with double descent valve

CONDITIONS TO START TEST
SYSTEM ASSEMBLED AND WORKING - CABIN ON THE LOWER FLOOR

TEST PROCEDURE

1. Make sure the double valve control is active by verifying that parameter 02.32 is set to "2 Valv."
2. Check valve monitoring 1 (VD1):
    a. Press the RESET button on the SEC-3Q board, at the same time keep the red manual descent button of valve 2 (VD2) pressed
    b. The system begins the test by opening valve 1 and verifying that there is no downward movement.
        i. By manually keeping valve 2 open, the cabin will move downhill, the movement will be detected and the system will report the "Error A3 VD1" error thus making any subsequent run impossible.
    c. Verify that a new call is not accepted
    d. Reset the error by holding CLEAR on the keypad until the error is cleared.
3. Check valve monitoring 2 (VD2):
    a. Press the RESET button on the SEC-3Q board, at the same time keep the red manual lowering button of valve 1 (VD1) pressed
    b. The system begins the test by opening valve 1 and verifying that there is no downward movement.
    c. The system will proceed to valve 2 test
        i. By manually keeping valve 1 open, the car will move downhill, the movement will be detected and the system will report the "Error A3 VD2" error thus making any subsequent run impossible.
    d. Verify that a new call is not accepted
    e. Reset the error by holding CLEAR on the keypad until the error is cleared.

The test must be performed before the final commissioning of the system, and during periodic checks.

Functionality tests of the control devices of the correct operation of the electronically monitored valves

This procedure applies to those systems equipped with electronic valve monitoring.

Examples of electronically monitored valve groups:

- Bucher iValve
- GMV NGV A3
- GMV NGV A3 + monitoring

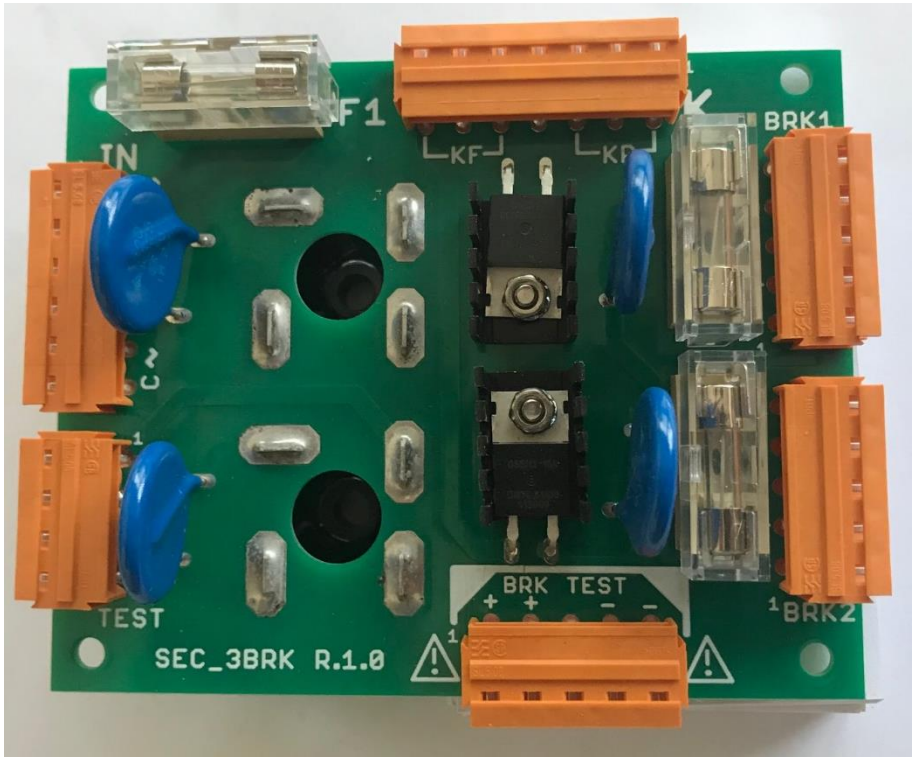
CONDITIONS TO START TEST: SYSTEM ASSEMBLED AND WORKING

TEST PROCEDURE

1. Make sure that parameter 02.32 is correctly set to the value corresponding to the valve group installed. Examples:
    a. iValve
    b. NGV A3
    c. NgvA3 +m
2. Perform the test according to the manufacturer's instructions for the valve assembly installed.
    a. Check that the system reports the error corresponding to the type of valve group installed. Examples:
    b. Err. iVALV Run
    c. Err. iVALV Stop
    d. Err.A3NGV RUN hi
    e. Err.A3NGV RDY hi
    f. Err.A3NGV RDY lo
    g. Err.A3NGV RUN lo
3. Verify that a new call is not accepted
4. Reset the error by holding CLEAR on the keypad until the error is cleared.

The test must be performed before the final commissioning of the system, and during periodic checks.

Single coil brake TEST (A3 / EN81-20) with SEC-3BRK



TEST procedure

1. open AM circuit breaker
2. disconnect the connector BRK1 from SEC_3BRK board and connect it to the output BRK TEST (on same board)
3. close AM breaker
4. insert a call
5. at starting press TBRK button, and hold it down
6. stop the run by opening AM breaker, while holding TBRK button pressed
7. verify that anyway car stops, even with one brake forced open
8. CLEAR any possible alarm which is recorded by the controller

Repeat the TEST with connector BRK2 (second brake coil)

When finished restore the original connections of the connectors on SEC_3BRK

Tests of the car uncontrolled movement detection device (UCM) for systems with DZSM safety module

PERFORM THE TEST ONLY IF THE SYSTEM IS EQUIPPED WITH RE-LEVELING FUNCTION WITH OPEN DOORS, OR ADVANCE DOOR OPENING (EN 81-20, 5.6.7.1)

In order to test the correct operation of the safety device against uncontrolled movement an “A3 test kit” is provided. It operates on the safety circuit and simulates the opening of the landing doors outside the unlocking zone (test applicable only with the DZSM safety module).

CONDITIONS TO START THE TEST:

ELEVATOR INSTALLED AND WORKING CORRECTLY

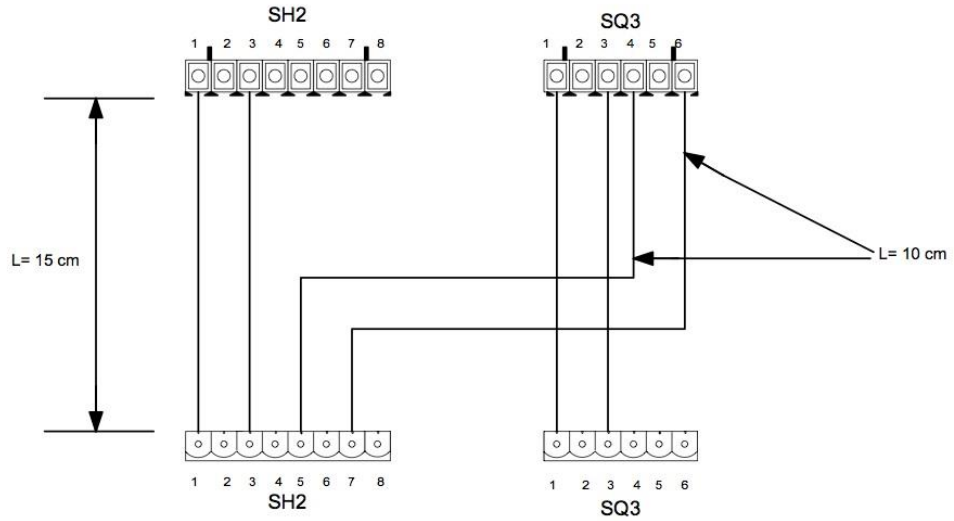
TEST INSTRUCTION:

1. Register a call by the SEC-3KBD keypad
2. Wait for the standby condition, i.e. the system is stationary with closed doors (led 1 2 3 4 5 6 lit on board SEC-3S)
3. Open the AM switch (to remove voltage from the safety circuit)
4. CONNECT THE A3 TEST KIT PROVIDED BY SECURLIFT
5. Set parameter 02.33 to "TEST”
6. Close the AM switch
7. Register a call by the SEC-3KBD keypad
8. The elevator starts moving and the controller sets the nominal speed
9. IF THE SAFETY SYSTEM WORKS CORRECTLY, THE ELEVATOR STARTS MOVING AND IS BLOCKED AS SOON AS IT LEAVES THE DOOR UNLOCKING ZONE.
10. Open the landing door by the emergency key and check the movement carried out by the car
11. To reset the system in working condition:
    a. close the landing door
    b. remove the A3 test kit
    c. restore the original connections
    d. press for 5 sec the Clear button on the SEC-3KDB keypad
    e. Return the parameter 02.33 to "Yes"
    f. press the RESET button on the SEC-3Q main board

NOTE: The test system provided by SECURLIFT maintains the same safety level of the normal operating condition. The speed of the system reached at the moment you open the security contact depends on the speed reached by the car, and therefore by the acceleration that occurs in the 20cm of floor zone.
The speed programmed for the A3 test is the same as the one set during normal operation.

The test must be performed prior to first installation of the system, and during periodic checks.

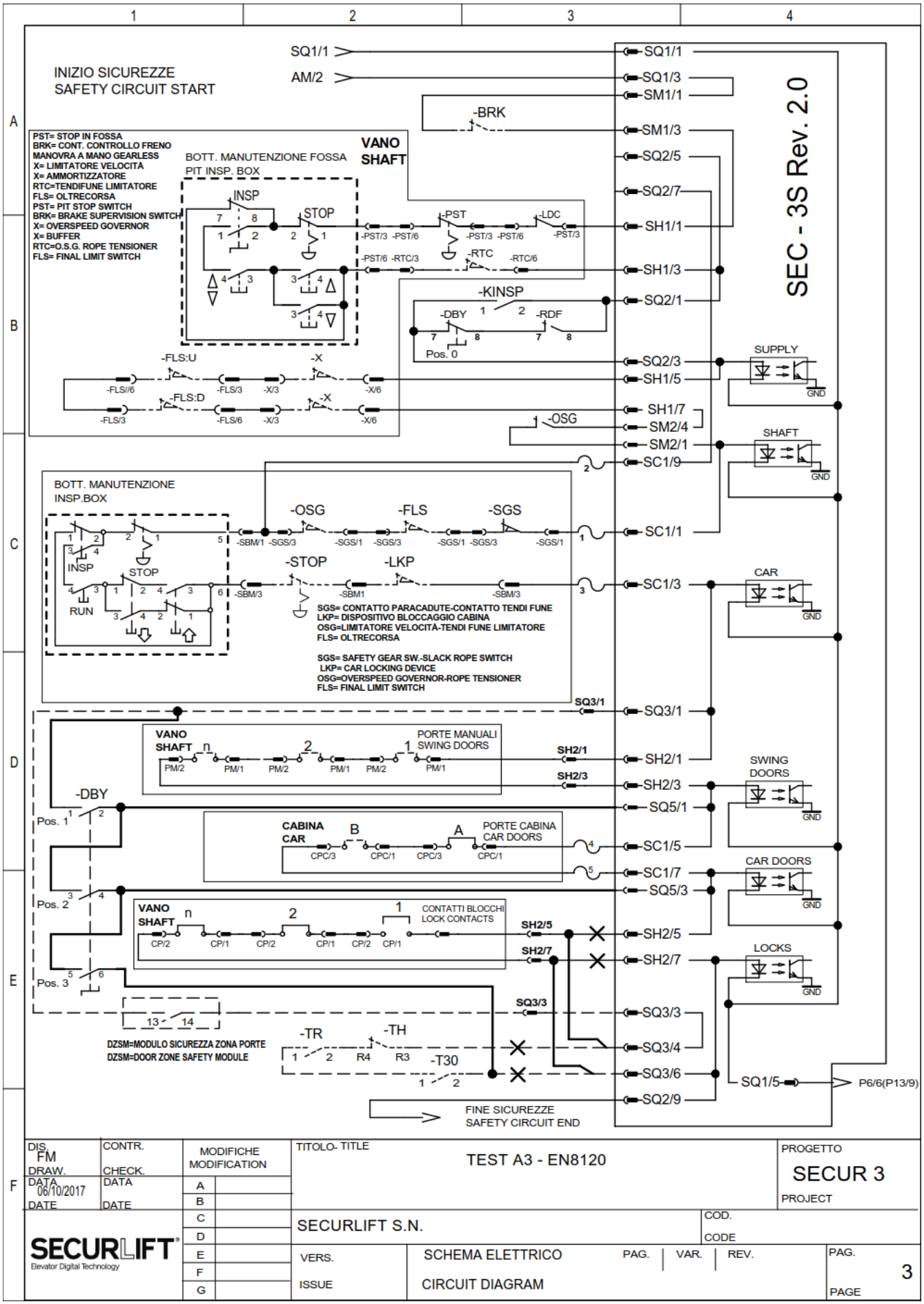
Electrical connection of the A3 test Kit



ITEM	CODICE	DESCRIZIONE	Q.TÀ	Q.TÀ	Q.TÀ	Q.TÀ	Q.TÀ	Q.TÀ	Q.TÀ	Q.TÀ	Q.TÀ	Q.TÀ	NOTE
P01	230231V06	CONN. WEID. BLC 5.08/ 6R OR - 6 POLI	1										SQ3
P02	230231V08	CONN. WEID. BLC 5.08/ 8R OR - 8 POLI	1										SH2
P03	230231P01	TERM. WEID. BLC - DFFC 0.5-1 SN3000	6										
P04	230241V06	CONN. WEID. SLS 5.08/06/180B SN OR BX	1										SQ3
P05	230241V08	CONN. WEID. SLS 5.08/08/180B SN OR BX	1										SH2
P06	210101VOR	N07V-K - 1x0.75 - ARANCIO											

DIS. MB DRAW.	CONTR. CHECK.	MODIFICHE MODIFICATION	TITOLO-TITLE		PROGETTO
DATA 20/01/2012 DATE	DATA DATE	A B C D E F G	CONNESSIONE TEST A3 CONNECTION FOR A3 TEST		SECUR 3 PROJECT
SECURLIFT Elevator Digital Technology			SECURLIFT S.N.		COD. CODE
			VERS. ISSUE	SCHEMA ELETTRICO CIRCUIT DIAGRAM	PAG. V . 001 | VAR. .002 | REV.
					PAG. 4 PAGE

Safety circuit after insertion of the A3 test kit



Tests of the uncontrolled car movement detection device (UCM) for systems with absolute encoder ELGO LIMAX 3CP - SAFE

PERFORM THE TEST ONLY IF THE SYSTEM IS EQUIPPED WITH RE-LEVELING FUNCTION WITH OPEN DOORS, OR ADVANCE DOOR OPENING (EN 81-20, 5.6.7.1)

With the car at top floor and controller in stand-by mode, enter programming in parameter **07.21** and select **test UCM**, press button M and save the changes.

Make a call. When the car leaves the door zone (20mm) the safety circuit opens and the run stops

To set it back in normal conditions:
07.21= No
Press CLEAR

ELGO LIMAX – absolute positioning system

Following procedures must be performed only after lift installation is completed, with all safeties installed and checked.

1. Connect programming keypad to SEC-3Q board by the RJ45 cable
2. Check parameter **01.02** – Number of stops [**nn**]
3. Check parameter **02.01** – Lift Type =
   - [**Trac.Dig**] if **traction** lift
   - [**Hydr.Dig**] if **hydraulic** lift
4. Check parameter **07.01** - Encoder Type = [**Limax2**]
5. Insert value in parameter **07.11 - Range Synch.:**
   a) Rated speed = 0.63m/s 07.11 = 750mm
   b) Rated speed = 1m/s 07.11 = 1300mm
   c) Rated speed = 1.6m/s 07.11 = 2200mm

6. HYDRAULIC LIFT ONLY

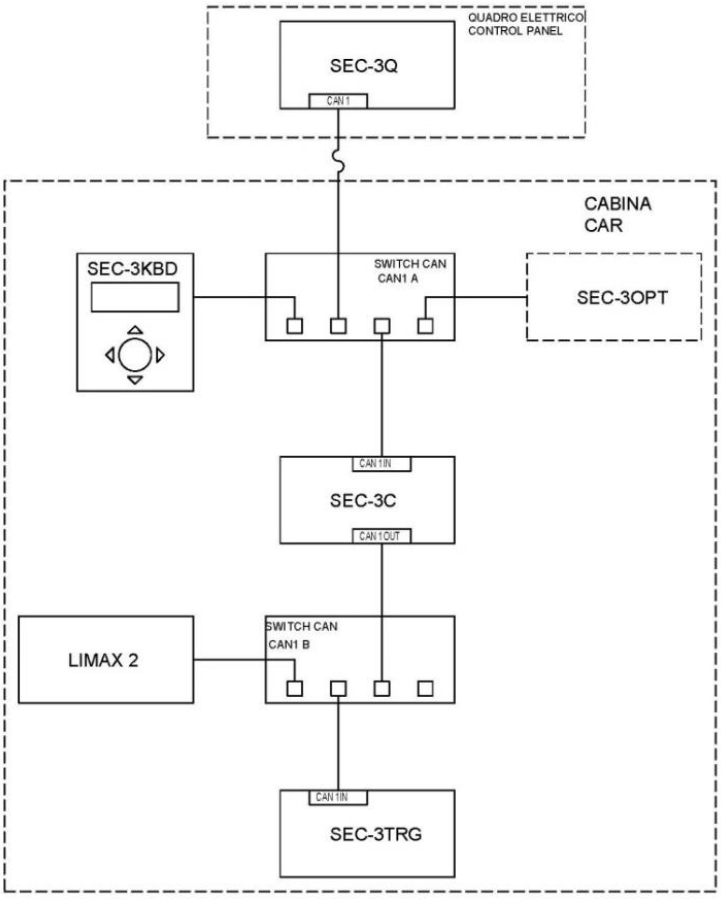
Verify default values:

09.01 = 100
09.02 = 1000
09.03 = 1000
09.04 = 1000
09.05 = 1000

Exit and save

7. SET floors levels

7.1. Go on car roof, connect programming tool to **CAN1:A** by a suitable CAN cable



For LIMAX 2

7.2. Set parameter **07.04 – Floors Setup = [SETTING];** press **M** then ▶ to confirm; display shows **P01 [00000]**
7.3. Move the car to bottom floor level. Down run will be **in inspection mode or RDF , at low speed**.
7.4. With car at bottom floor level press **M;** the level is registered, and the system is now ready for second floor level acquisition;
7.5. Move the car in inspection mode to second floor level; press **M**; display shows the registered level for second floor and gets ready for next floor;
7.6. Move to next floor; each time by pressing **M** floor level is registered (stopping accuracy is not important).
7.7. Once the penultimate floor is registered next up run (to top floor) will be **in inspection mode only, at low speed**
7.8. Once top floor level is registered display shows **End – save Eeprom**

8. HYDRAULIC LIFT ONLY

8.1. Register some calls in **UP direction**, and verify on the display the stopping error.
8.1.1. To correct negative errors insert a negative correction at parameter 07.08
8.1.2. To correct positive errors insert a positive correction at parameter 07.08
8.2. Register some calls in **DOWN direction**, and verify on the display the stopping error.
8.2.1. To correct negative errors insert a positive correction at parameter 07.08
8.2.2. To correct positive errors insert a negative correction at parameter 07.08

9. TRACTION LIFT ONLY

9.1. Back to machine room – controller; connect programming tool to SEC-3Q board
9.2. Enter parameter **07.05** and press **M** then ▶ to confirm
9.3. Wait for the aquisition of the four speed decelaration (High - Int.High - Int.Low - Low); perss **M**
9.4. back to **07.01**; press **M**
9.5. in menu 09 it is possible to check the registered slow down distances; exit and save.

10. Floors level fine setting

10.1. connect keypad to **CAN1:A** board by appropriate CAN cable; bring keypad inside the car;
10.2. set parameter **07.04** [**RegFLOOR**]; exit and save
10.3. place calls to every floor by the keypad (▲ or ▼ + **M**)
10.4. at every floor check stopping accuracy:
a) if car stops low: by ▶ insert the error space (+ in millimeters)
b) if car stops high: by ◀ insert the error space (- in millimeters)
c) press **M** to confirm modification
10.5. when finished, enter programming mode, set parameter **07.04** [**No**]; exit and save

11. Additional ajdustements

- 07.06 – Door zone Space = 150mm
- 07.07 - Range stop = 00040mm (**traction**)
- 07.08 - Range stop UP = 040mm (**hydr.**)
- 07.09 - Range stop DN = 040mm (**hydr.**)
- 07.10 - Range Relevel. = 060mm
- 07.12 - Range StopRelev. = 010mm (**traction**)
- 07.13 – Range StopRel.UP = 010mm (**hydr**.)
- 07.14 – Range StopRel.DN = 010mm (**hydr**.)

12. RE-LEVELLING adjustment (if present)

Once stopping accuracy has been adjusted, reduce re-levelling space: 07.10 = 20mm
Start the relevelling drive and adjust stopping accuracy as stated at point 8, but acting on parameter 07.12 (traction) or 07.13 e 07.14 (hydraulic).

For LIMAX 3CP - SAFE

If the device is completely reset, EL33 PRE-COMMISS appears on the display

12.1. Set **07.04 - Floor Setup = [SETTING];** press M then ▶ to confirm; the display shows **set FLS: D (set extreme lower position).**
12.2. Bring the car to the lowest possible point of travel. The downward movement takes place exclusively in RDF or in inspection, at low speed.
12.3. With the **car** at the lowest point, press M; the value is registered and the system is ready for the acquisition of the first floor.
12.4. in INSPECTION, move the car to the first floor; press **M**; the display shows the value recorded for the first floor and is ready for the next floor
12.5. Move to the next floor; each time, by pressing **M**, the value is recorded (stopping precision is not important).
12.6. Reached the penultimate floor, the next run will only take place in low speed
12.7. Reached the top floor and saved the value, the display will show **set FLS: U (set extreme upper position).**
12.8. Reach the highest possible point, press M; the value is registered and the display will **show End - save Eeprom.**
12.9. Still in RDF, move the car below the end-limit switch zone
12.10. Set 07.17> CLEAR (set the upper end-limit switch space 70mm)
12:11. Set 07.18> CLEAR (set the lower end-limit switch space 70mm)

13. ONLY FOR HYDRAULIC LIFTS
13.1. Make **upwards** calls and check the stop error that is shown on the display.
13.1.1. For errors with negative sign, introduce a negative correction to parameter 07.08
13.1.2. For errors with a positive sign, introduce a positive correction to parameter 07.08
13.2. Make **downwards** calls and check the stop error that is shown on the display.
13.2.1. For errors with negative sign, introduce a positive correction to parameter 07.09
13.2.2. For errors with a positive sign, introduce a negative correction to parameter 07.09

14. ONLY FOR TRACTION LIFTS
14.1. return to the machine room - control panel; connect the keypad to the SEC-3Q board
14.2. enter parameter **07.05** and press **M**; confirm with ▶
14.3. wait for the acquisition of the four speeds (High - Int. High - Int. Low - Low); press **M**
14.4. return **to 07.01**; press M
14.5. it is possible to view the deceleration values acquired in menu 09; exit and save

15. FINAL FLOORS ADJUSTMENT
15.1. Connect the keypad to **CAN1: A;** position yourself with the keypad inside the cabin
15.2. activate parameter **07.04 [RegFLOOR];** select **Setup**
15.3. make calls to each floor using the keypad (▲ o ▼ + **M**)
15.4. on each floor check the stop level:
d) if the car is **lower than** the floor with ▶ enter the value **+** in millimeters
e) if the cabin is **higher than** the floor with ◀ enter the value **-** in millimeters
f) press M to confirm the change
15.5. at the end, exit the regulation mode by setting **par 07.04 [No];** exit and save

16. Additional adjustments

- 07.06 – Door zone Space = 150mm
- 07.07 - Range stop = 00040mm (**traction**)
- 07.08 - Range stop UP = 040mm (**hydr.**)
- 07.09 - Range stop DN = 040mm (**hydr.**)
- 07.10 - Range Relevel. = 060mm
- 07.12 - Range StopRelev. = 010mm (**traction**)
- 07.13 – Range StopRel.UP = 010mm (**hydr**.)
- 07.14 – Range StopRel.DN = 010mm (**hydr**.)
- 07.17 - FLS space: U = 070mm
- 07.18 - FLS space: D = 070mm
- 07.19 - FCM space: U = 1800mm
- 07.20 - FCM space: D = 1800mm

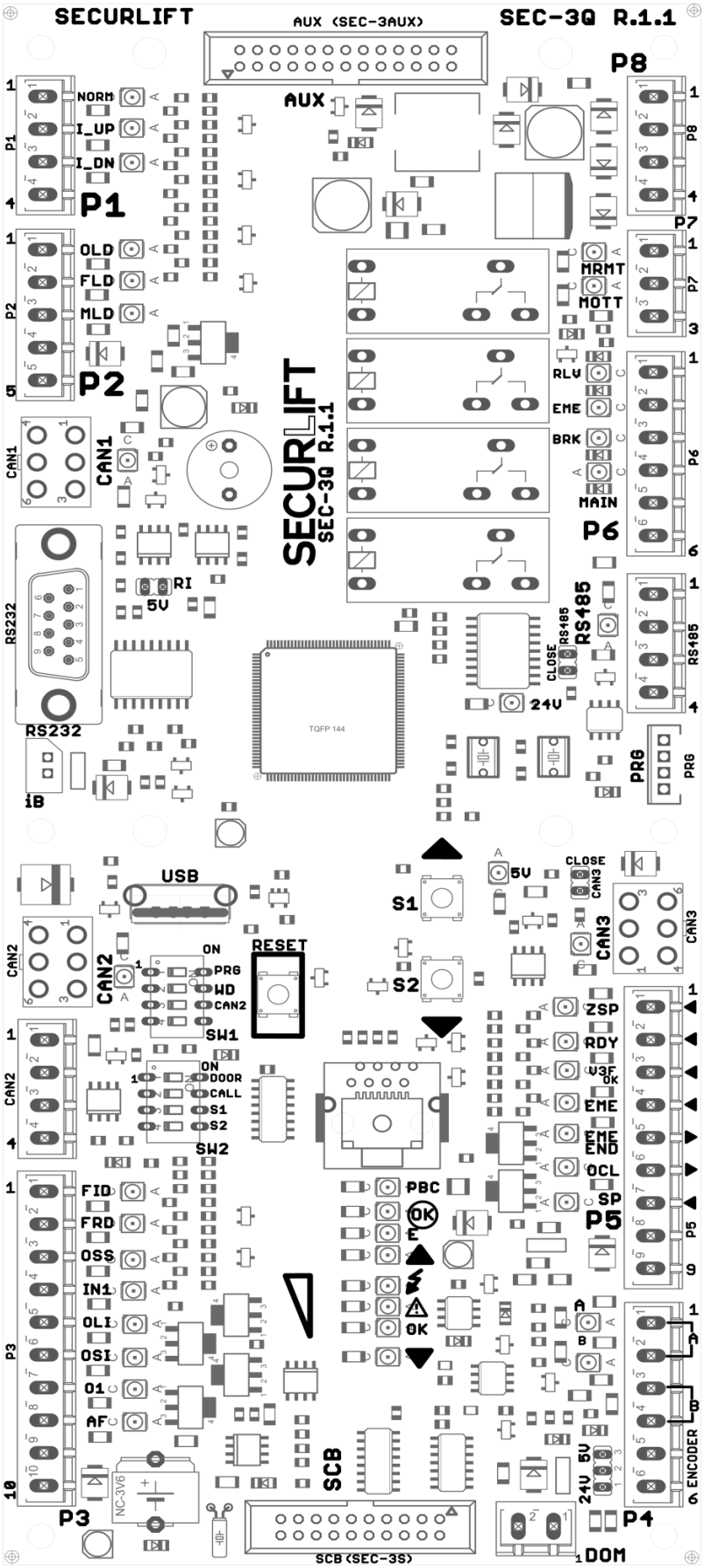
RE-LEVELLING adjustment (if present)

Once stopping accuracy has been adjusted, reduce re-levelling space: **07.10 = 20mm**

Start the relevelling drive and adjust stopping accuracy as stated at point 8, but acting on parameter 07.12 (traction) or 07.13 e 07.14 (hydraulic).

SEC-3Q – controller mother board

SEC-3Q is the main board of the system, located inside the control panel.



Dip switch SW1
PRG = always **OFF**
WD = Watch Dog enable – always **ON**
CAN2 = CAN termination. Refer to installation drawing – page 90.

Dip switch SW2
DOOR = doors disable
CALL = landing calls disable
S1 = future use
S2 = automatic calls test

LED's
In the following tables all LED symbols are shown with power ON, with car parked at bottom floor, after reset drive has been accomplished.

☼ = lit **● = off** **⊙ = blinking**

CAN1	⊙	RX/TX to car OK	PBC	⊙	TX Keypad KBD
CAN2	⊙	RX/TX to landings OK	OK	⊙	Alarm installation blocked
CAN3	⊙	RX/TX inverter OK	E	●	Alarm present
+24	☼	24 VDC	▲	●	UP direction
+5V	☼	5 VDC	↯	●	Danger speed alarm
OK	⊙	Outputs OK	△	●	Speed pre-alarm
			OK	●	Speed OK
			▼	●	DOWN direction

Buttons
RESET = makes a complete reset of the board, as if the power supply is switched off. Errors that may disable the lift operation (e.g. final limit switch, drive time supervision), are not cleared.
S1 ▲ = in RECALL mode execute an UP run.
S2 ▼ = in RECALL mode execute a DOWN run.

Emergency alert
While executing an emergency rescue, by just the brake opening function, board shows car direction (led's ▲ and ▼), and its speed by led's:
↯ = alarm danger speed - with beep with run stopping
△ = pre-alarm speed
OK = safe speed

Connectors

On-board connectors are located in order to group all signals depending on their address (car, shaft, machine room). Connectors name and pin numbering are printed on the board as follows:

- **AUX** Connection to board with auxiliary relay SEC-3AUX
- **SCB** connection to SEC-3S safety circuit board
- **USB** USB plug
- **PRG** software download
- **RS232** remote connection

P1 (RECALL inputs)

1	**NORM**	☼	Normal (●= Recall)	NC
2	**I_UP**	●	Inspection UP	NC
3	**I_DN**	●	Inspection DOWN	NC
4	GND			

P2 (load inputs)

1	**OLD**	☼	Overload	NC
2	**FLD**	●	Full load	NO
3	**MLD**	●	Minimum load	NO
4	+24 VDC			
5	GND			

P3 (various I/O)

1	**FID**	☼	Fire recall	NO
2	**FRD**	☼	Fireman's drive	NO
3	**OSS**	☼	Out of service	NO
4	**IN1**	●	not used	
5	**OLI**	●	Overload output	
6	**OSI**	●	out of service output	
7	**ISP**	●	INSPECTION/RECALL output.	
8	**AF**	●	Alarm filter	
9	+24 VDC			
10	GND			

P4 (encoder)

1	**A**	●	encoder A
2	**A**		encoder /A
3	**B**	●	encoder B
4	**B**		encoder /B
5	**do not connect!**		**+24VDC**
6	encoder – GND		

P5 (status inputs)

1	**ZSP**	☼	Zero speed	NC
2	**RDY**	☼	**I**nverter READY	NC
3	**V3F OK**	☼	Inverter FAULT	NC
4	**EME**	●	Emergency	NO
5	**END EME**	●	Emergency End	
6	**OCL**	●	Car light	
7	**SP**	☼	Start Permit	
8	+24 VDC			
9	GND			

P6 (drive outputs)

1	**RLV**	●	Re-levelling
2	**EME**	●	Emergency start
3	**BRK**	●	Brake
4	**MAIN**	●	Main contactor
5	common		
6	common		

P7 (supervision input)

1	**MRM T**	☼	Machine room temperat.	NC
2	**MOT T**	☼	Motor temperature	NC
3	GND			

P8 (supply)

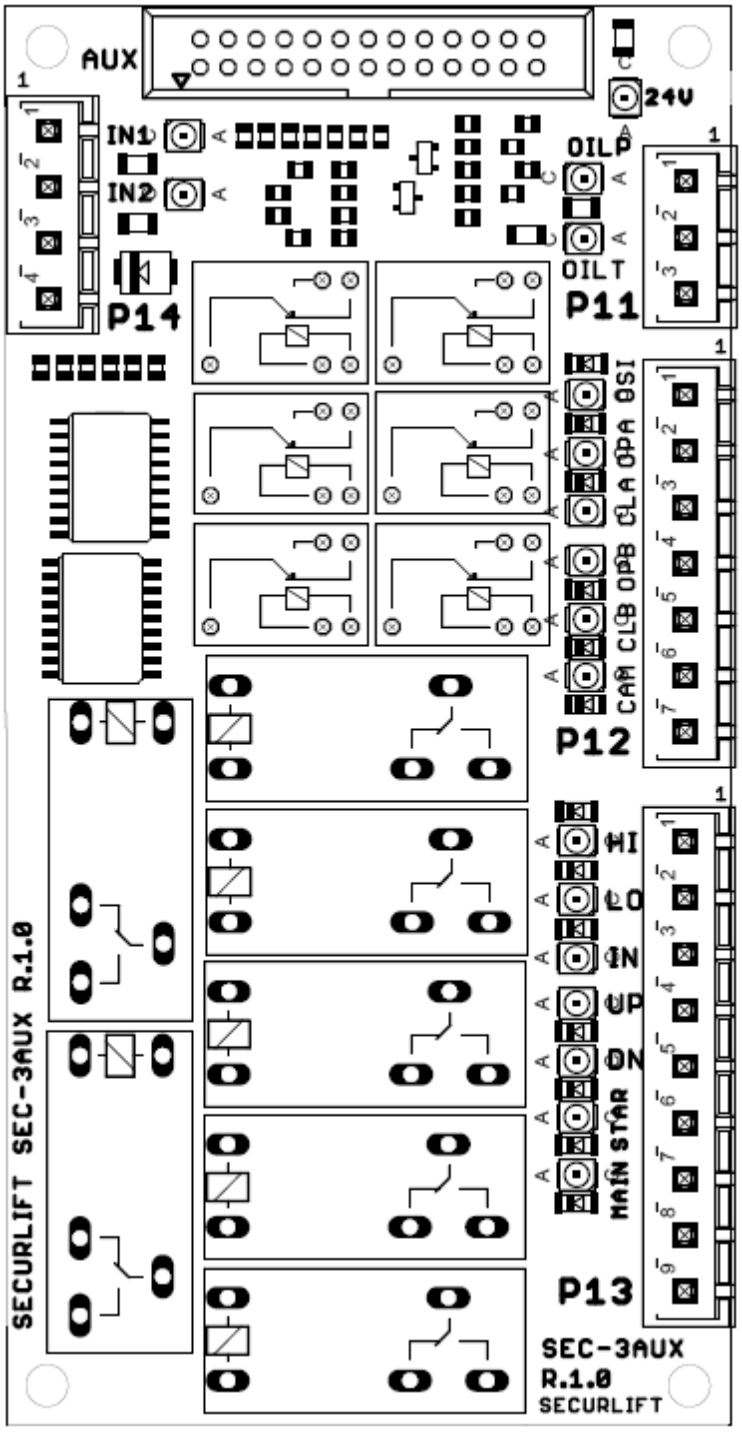
1	+24 VDC - Can2
2	+24 VDC - Emergency
3	+24 VDC - General
4	GND

CAN1 (serial connection to car)	**CAN2 (serial connection to landings and multiplex)**
1 CH ☼ CAN high	1 CH ☼ CAN high
2 CL CAN low	2 CL CAN low
3 +24 VDC	3 +24 VDC
4 GND	4 GND
5 +24 VDC	5 +24 VDC
6 GND	6 GND
CAN3 (serial connection to inverter)	**DOM (**monitoring BYPASS EN 81-20**)**
1 CH ☼ CAN high	1 input BYPASS EN 81-20 monitoring
2 CL CAN low	2 input BYPASS EN 81-20 monitoring
3 +24 VDC	
4 GND	
5 +24 VDC	
6 GND	

LED’s which are monitoring relay are connected in series to relay coil.

SEC-3AUX - board with auxiliary relay

SEC-3AUX board increases mother board functionalities. It is optionally used for door control, hydraulic valves drive, inverter interface.



Connectors

AUX = connection to SEC-3Q board

P11 (supervision inputs)			P12 (outputs)		
1	**OIL P**	☼ Oil pressure	1	**OSI**	● Out of service
2	**OIL T**	☼ Oil temperature	2	**OP A**	● A side door OPEN command
3	GND		3	**CL A**	● A side door CLOSE command
			4	**OP B**	● B side door OPEN command
			5	**CL B**	● B side door CLOSE command
			6	**CAM**	● Retiring ramp
			7	GND	
P13 (drive outputs)			**P14**		
1	**HIGH**	● High speed	1	**IN1**	Brake 1 Monitoring / NGV A3
2	**LOW**	● Low speed	2	**IN2**	Brake 2 Monitoring / NGV A3
3	**INSP**	● Inspection speed	3	+24 VDC	
4	**UP**	● UP command	4	GND	
5	**DN**	● DOWN command			
6	**STAR**	● STAR contactor			
7	**MAIN**	● MAIN contactor			
8	common				
9	common				

SEC-3KBD – user interface keypad

SEC-3KBD is the user interface. It allows monitoring and programming of the system.
At power-on the display shows software revision index, software revision date and motor drive code.
Please refer to PM (programming manual) for detailed parameter list.

Connectors
On-board connector (**PBC**) allows connection to SEC-3Q board by a standard RJ45 serial cable.

Trimmers
Trimmer PT1 adjusts the LCD contrast.

Buttons
When in **normal** mode:

- ▶ : **OPEN** door command
- ◀ : **CLOSE** door command
- ▲ : **increase** destination floor
- ▼ : **decrease** destination floor
- **M** : **register a call** to selected destination floor
- **Clear** = if pressed during 3 sec. clears the error that are disabling the lift operation. Obviously, if the error persists, the lift will be disabled again.

When in **recall** mode:

- ▲ : sets **UP** direction, in inspection speed
- ▼ : sets **DOWN** direction, in inspection speed

Programming
To enter **PROGRAM MODE**:

- press and hold **M** button for 3"; display will show menu 00 "QUIT"
- press ▶ or ◀ to scroll menus
- press **M** to enter selected menu
- press ▶ : scroll parameters forward
- press ◀ : scroll parameters forward
- press ▲ : increase parameter value
- press ▼ : decrease parameter value
- press **M** to exit menu

To exit **PROGRAM MODE**:

- press **Back** to go to menu 00 – "EXIT"
- press **M**
- press **M**
- press ▶ : **save** modification
- press ◀ : **don't save** modification

Monitoring
Press **M +** ◀ to scroll info pages:

- **CALLS** (car side A, ▶ car side B, ▶ down side A, ▶ down side B, ▶ up side A, ▶ up side B)
- **CAR inputs** (SEC-3C car board led's and connectors monitoring)
- **SHAFT signals** (IU – ID)
- **SOFTWARE** revisions (controller, car, landings A and B side)
- **ENCODER** (with digital shaft only)
- **GROUP** (duplex, triplex, quadruplex)

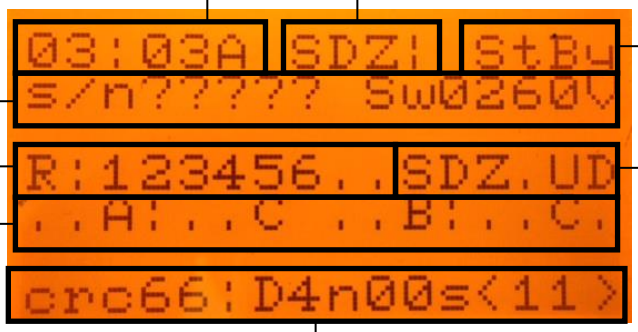
User interface display – main screen

present floor : destination floor

Misc information in succession:
- Serial number – SW version
- Date
- Num: number of runs
- P: position and error (only Limax)
- **Error message** (see „error codes“ in the programming manual)

Sensors:
- S___: floor sensor
- _D__: floor sensor
- __Z_: floor sensor
- ___¦ : centr. synchr.
- ___ˈ: top synchr.
- ___ı: bottom synchr.
- ___+: floor passage

Misc information in succession:
- **Elevator state** (see “state messages” at the end of the programming manual)
- Left run time (only during the run)



Sensors:
- S_____: floor sensor
- _D____: floor sensor
- __Z___: floor sensor
- ____U_: top synchr.
- _____D: bottom synchr.

Safety circuit:
- 1: SUPPLY safety closed
- 2: SHAFT safety closed
- 3: SWING DOORS safety closed
- 4: LOCKS safety closed
- 5: CAR safety closed
- 6: CAR DOORS safety closed

Door operator A/B side:
- Op_:___: opening
- Cl_:___: closing
- __:F__: safety shoe
- __:_O_: final limit switch opening
- __:__C: final limit switch closing

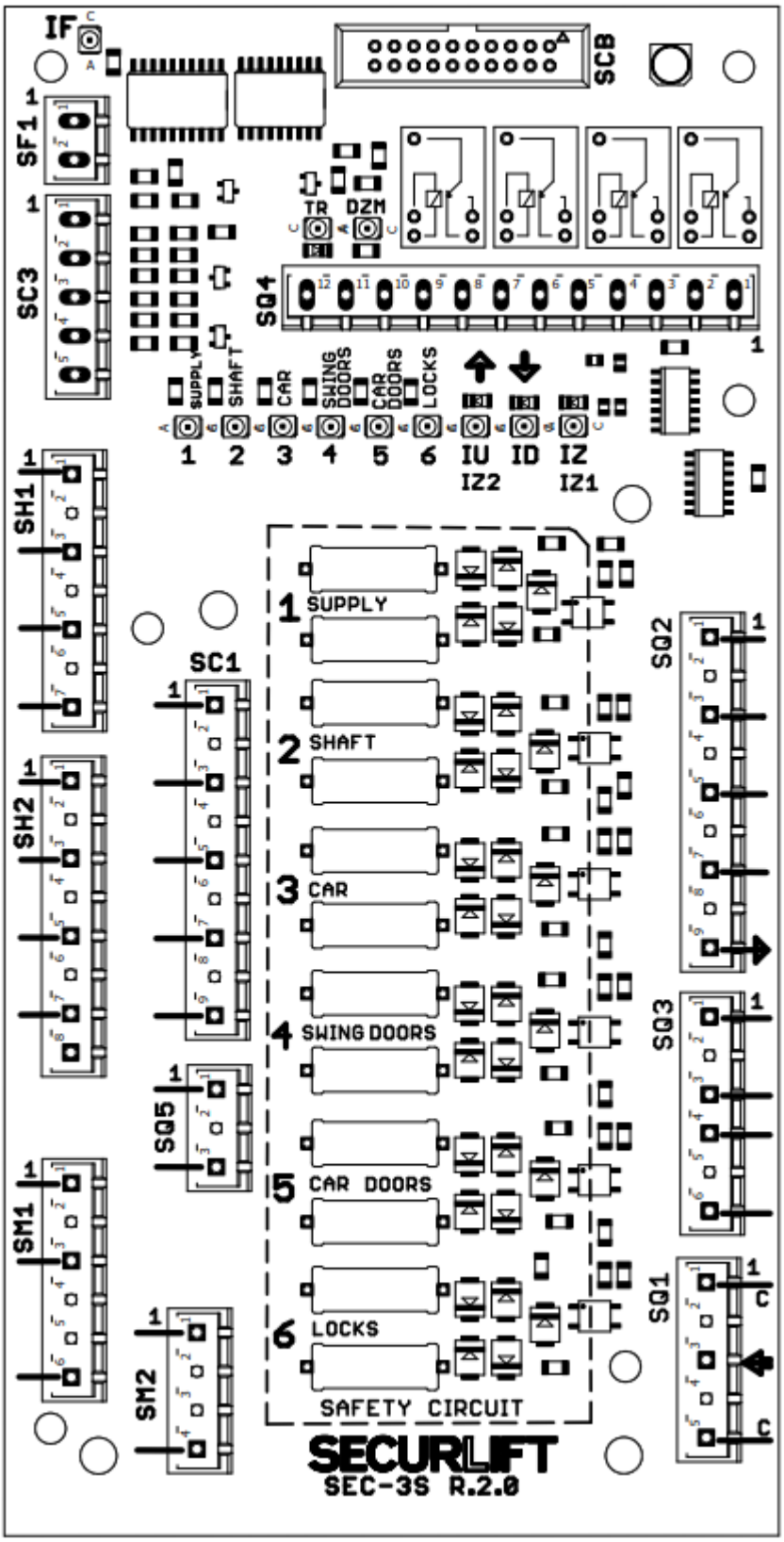
Additional debugging information – for internal use

Press **CLEAR** + **<** or **>** to change screen; screens can differ depending on SW version; hereafter some examples by scrolling towards left (CLEAR + <):

1. HLIB*- 0.00 e+0000 = Limax information:
   a. HLI: speed command; B: Brake; *: U(UP)/D(DOWN)/-
   b. 0.00: speed [m/s]; e+0000: error
2. E = connection with automatic emergency device
3. I01 W00 RF01f01= I01: nr board starts, W: Watchdog; RF: synchronisation; f: stops not at floor level
7. In succession: ID and time/date/board temperature
8. Tm:___s___= measured [Ohm] and defined motor thermistor
11. 00000 40946 0018 = debugging Limax: absolute position; Limax can messages/sec
13. A00000 00000 000 = incremental Encoder: A-channel; B-channel; difference
14. d___ s___ a___ = analog inputs: DOM; SIC_6, Analog 24V
16. Code Security/no code enabled

SEC-3S – safety circuit board Rev. 2.0

SEC-3S board is the interface to all devices related to safety circuit.



LED's

In the following tables all LED symbols are shown with power ON, with car parked at bottom floor, after reset drive has been accomplished.

☼ = lit **● = off** **⊙ = blinking**

SUPPLY	☼	safety circuit START: AM circuit breaker, phase supervision, pit stop sw., OSG rope tensioner	**TR**	●	future use
			DZM	●	future use
			IU ↑	☼	UP magnetic switch
			ID ↓	☼	DOWN magnetic switch
SHAFT	☼	shaft static safety circuit: final limit sw., buffers, OSG, etc.	**IZ**	☼	DOOR ZONE magnetic switch
			IM	☼	Car at floor magnetic switch
CAR	☼	car safety circuit: stop sw., inspection sw., safety gear sw.	**IZ1**	☼	DOOR ZONE magnetic switch (ELGO LIMAX2)
			IZ2	☼	DOOR ZONE magnetic switch (ELGO LIMAX2)
SWING DOORS	☼	landing swing doors safety circuit	**IF**	●	Input pit inspection box
CAR DOORS	☼	car door safety contact			
LOCKS	☼	landing doors locks contacts			

Connectors

- **SCB** = connection to SEC-3Q board

SH1 (shaft)			
1 3	**SUPPLY**	☼	PST: Pit Stop Switch, pit ladder, pit inspection box RTC: Over speed governor rope tensioner
5 7	**SHAFT**	☼	FLS: Final Limit Switches X: buffers Overspeed Governor

SH2 (landing doors)			
1 3	**SWING DOORS**	☼	PM: manual landing swing doors
5 7	**LOCKS**	☼	CP: landing doors locks

SC1 (car)			
1 3	**CAR**	☼	SGS: Safety Gear Switch, Overspeed Governor SBM: inspection box, Stop button LPK: Car Locking Pin FLS: Final Limit Switches
5 7	**CAR DOORS**	☼	CPC: Car Door Contact
9			RB/RDF: Recall Drive Switch

SC3 (monostable shaft switches)			
1		☼	Not used
2	**IU/IZ1↑**	☼	UP magnetic switch/ DOOR ZONE magnetic switch (ELGO Limax)
3	**ID ↓**	☼	DOWN magnetic switch
4	**IZ/IZ2**	☼	DOOR ZONE magnetic switch
5	GND		

SM1 (machine room safeties)			
1 3			BRK: manual brake switch
4 6			Not used

SM2 (machine room safeties)			
1 4			OSG: Over speed governor

SQ1 (controller interface)			
1			Common Safety Circuit
3			Safety Circuit Start
5			Common Safety Circuit

SQ2 (recall drive)			
1 3			RDF/ KINSP/BYPASS
5 7			RB - RDF
9			Safety Circuit End

SQ3 (ADO-ACL safeties)			
1 3			DZSM
4 6			T30 – TH – TR BYPASS landing door contact (LOCKS)

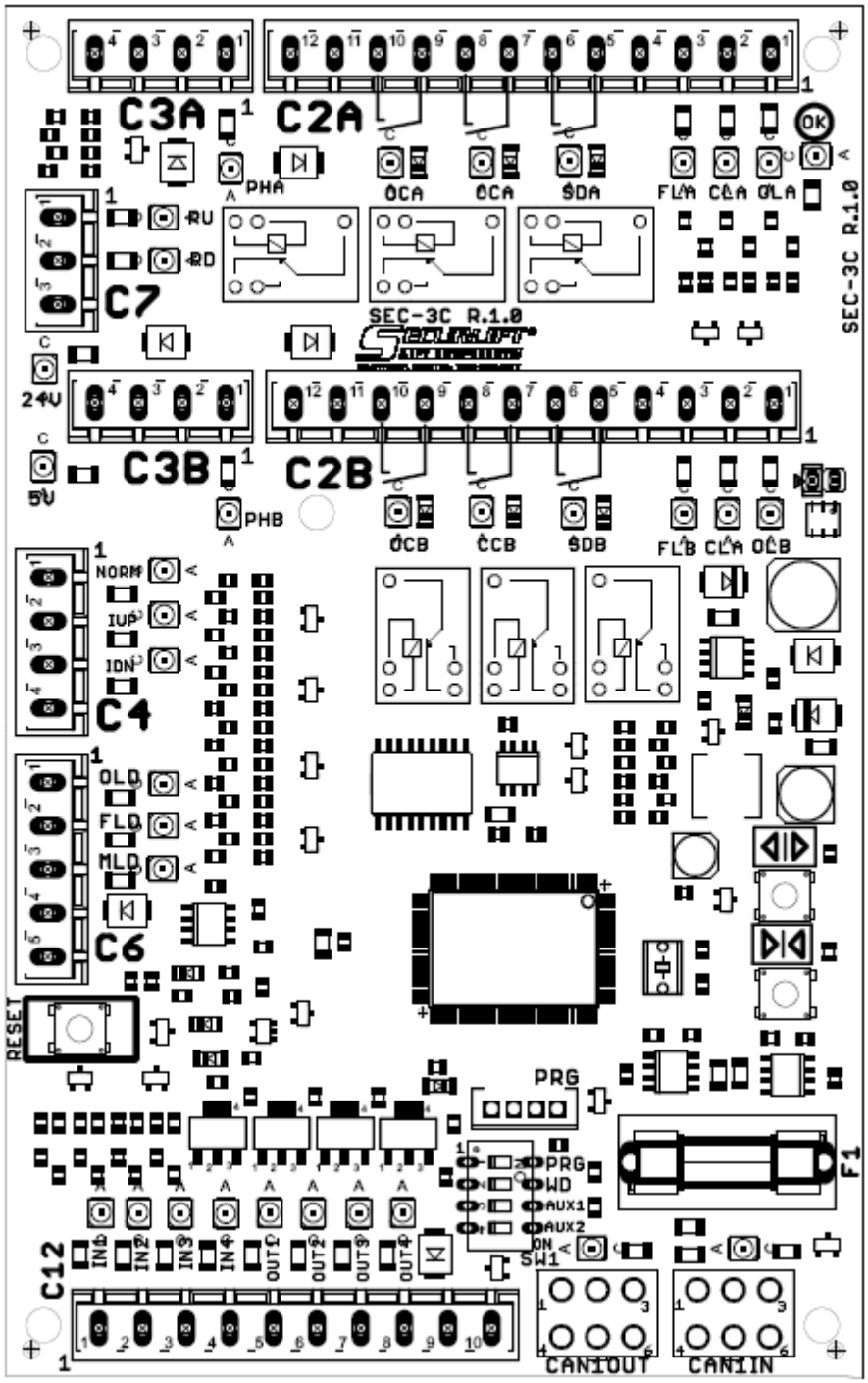
SQ4 (ADO-ACL safety module interface)			
1 2		☼	UP sensor output
3 4		☼	DOWN sensor output
5 6		☼	DOOR ZONE sensor output
7 8		☼	DOOR ZONE output controlled by SEC-3Q
9			DZSM control
10			GND
11			+24 VDC
12			GND

SQ5 (BYPASS)			
1			BYPASS manual door contact (SWING DOOR)
3			BYPASS car doors contact (CAR DOOR)

SF1 (input pit inspection box)			
1			pit inspection box input
2			pit inspection box input

SEC-3C - car board

SEC-3C is the interface between controller and all car devices.



Dip switches
WD = Watch Dog enable - always **ON**
PRG = always **OFF**
Jumper
J3 = not used

LED

In the following tables all LED symbols are shown with power ON, with car parked at bottom floor, after reset drive has been accomplished.

☼ = lit **● = off** **⊙ = blinking**

STS	●		**+24V**	☼	24 VDC (fuse F1)
TX	⊙	Serial transmission	**+24V**	☼	24 VDC
RX	⊙	Serial reception	**+5V**	☼	5 VDC
↯	●	outputs overload			
OK	☼	outputs OK			

Buttons

RESET = makes a complete reset of the board, as if the power supply is switched off.

◀ **II** ▶ = if in **inspection** mode – open the doors

▶ **II** ◀ = if in **inspection** mode – close the doors

Connectors

- **CAN1IN - CAN1OUT** = serial communication connectors

	C2A (door A)				
1	**OL A**	☼	OPEN limit switch	NC
2	**CL A**	●	CLOSE limit switch	NC
3	**CFL A**	☼	Safety edge	NC
4	GND			
5	**SD A**		Inspection/ Nudging	
6	"		"	
7	**CL A**	●	CLOSE command	NO
8	"		"	
9	**OP A**	●	OPEN command	NO
10	"		"	
11	+24 VDC			
12	GND			

	C2B (door B)				
1	**OL B**	☼	OPEN limit switch	NC
2	**CL B**	●	CLOSE limit switch	NC
3	**CFL B**	☼	Safety edge	NC
4	GND			
5	**SD B**		Inspection/ Nudging	
6	"		"	
7	**CL B**	●	CLOSE command	NO
8	"		"	
9	**OP B**	●	OPEN command	NO
10	"		"	
11	+24 VDC			
12	GND			

	C3A (photocell A)				
1	**PH A**	☼	photocell contact	NC
2	GND			
3	+24 VDC		photocell supply	
4	GND			

	C3B (photocell B)				
1	**PH B**	☼	photocell contact	NC
2	GND			
3	+24 VDC		photocell supply	
4	GND			

	C4 (inspection inputs)				
1	**NORM.**	☼	Normal (● = Inspection)	NC
2	**IUP**	●	Inspection UP	NC
3	**IDN**	●	Inspection DOWN	NC
4	GND			

	C7 (synchronisation inputs)				
1	**RU**	☼	UP synchr. sw.	NC
2	**RD**	●	DOWN synchr. sw	NO
3	GND			

	C6 (load inputs)				
1	**OLD**	☼	Overload	NC
2	**FLD**	●	Full load	NO
3	**MLD**	●	Minimum load	NO
4	+24 VDC			
5	GND			

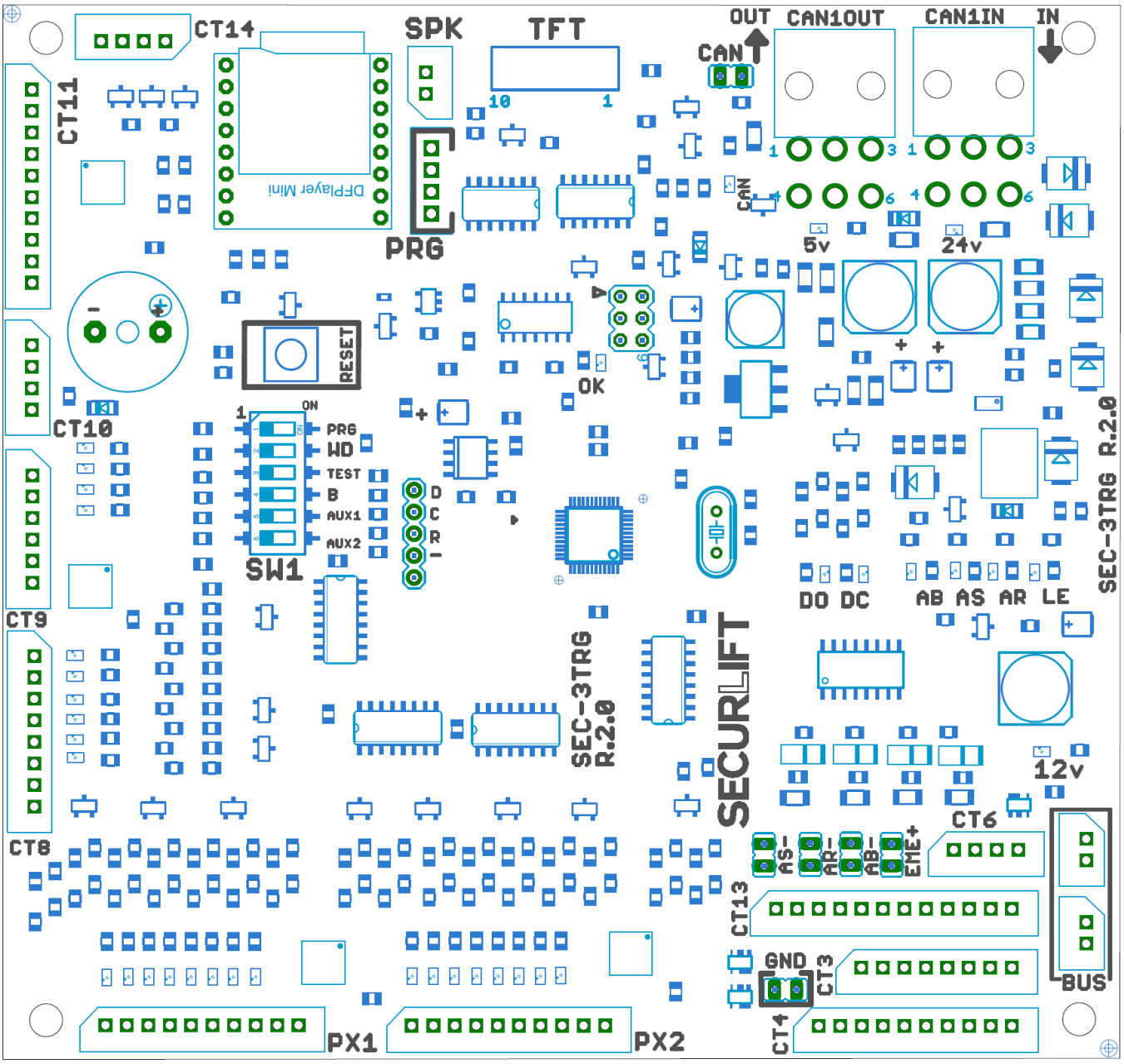
	CAN1OUT (serial ling to COP – SEC-3 TRG)
1	**CH** – CAN high
2	**CL** – CAN low
3	+24 VDC
4	GND
5	+24VDC
6	GND

C12 (various I/O)			CAN1IN (serial link to controller – SEC-3Q)
1	IN1	input door motor temperature	1 CH – CAN high
2	IN2	input car doors closed while Bypass - **side A**	2 CL – CAN low 3 +24 VDC 4 GND
3	IN3	input car light control	5 +24VDC
4	IN4	input car doors closed while Bypass - **side B**	6 GND
5	OUT1	**FIRE** fire/fireman's	
6	OUT2	**PRL** Landing priority	
7	OUT3	**ALF** Alarm filter – Easy Alarm	
8	OUT4	**DBY**BYPASS active	
9	+24 VDC		
10	GND		

LED's which are monitoring relay are connected in series to the relay coil.

SEC-3TRG – (R. 2.0) - COP board

SEC3-TRG is the Car Operation Panel board. It collects all the calls and drives all the signalizations.



JUMPERS

AS-	Alarm Sent negative to -12
AR-	Alarm Received negative to -12
AB-	Alarm Button negative to -12
EME+	Car Emergency Light positive to +12
CAN	CAN bus loop closing
GND	-12 to GND

Connectors

CT3 (ISE inputs)

1	intercom + (alarm sent)
2	intercom –
3	alarm button
4	emergency light
5	alarm received +12V
6	//not used//
7	+12VDC
8	-12VDC

CT4

1	door open
2	door close
3	+12VDC
4	+12VDC
5	emergency light
6	alarm button
7	intercom + (alarm sent)
8	intercom –
9	+12VDC
10	-12VDC

CT6

1	+12VDC
2	alarm sent
3	alarm received
4	-12VDC

CT8 (opzioni)

1	**FRD**	●	Fireman's key switch
2	**STOP & OSS:**	●	STOP/OSS input
3	**PRC**	●	Car Priority key switch
4	**O_FIRE**		Fire/Fireman's output
5	**OSI**		Out of Service output
6	**O_PRC**		Priority call output
7	+24VDC		
8	GND		

CT9

1	**O_EME**		In Emergency output	
	OVR		Overload	
2	**O_GNG**		aux. Gong output	
3	**FRD2**	●	2nd Fireman's key	NC
4	**IN**		calls disable input	
5	+24 VDC			
6	GND			

CT10

1	**UPD:**	UP direction arrow
2	**DND:**	DOWN direction arrow
3	+24 VDC	
4	GND	

CT11 (car position output)

1	**a**	segment a	bin 1	dec 1st floor
2	**b**	segment b	bin 2	dec 2nd floor
3	**c**	segment c	bin 4	dec 3rd floor
4	**d**	segment d	bin 8	dec 4th floor
5	**e**	segment e	bin 16	dec 5th floor
6	**f**	segment f	bin 32	dec 6th floor
7	**g**	segment g		dec 7th floor
8	**O_OVR** overload output (with 7 segments Minus symbol)			dec 8th floor
9	+24 VDC			
10	GND			

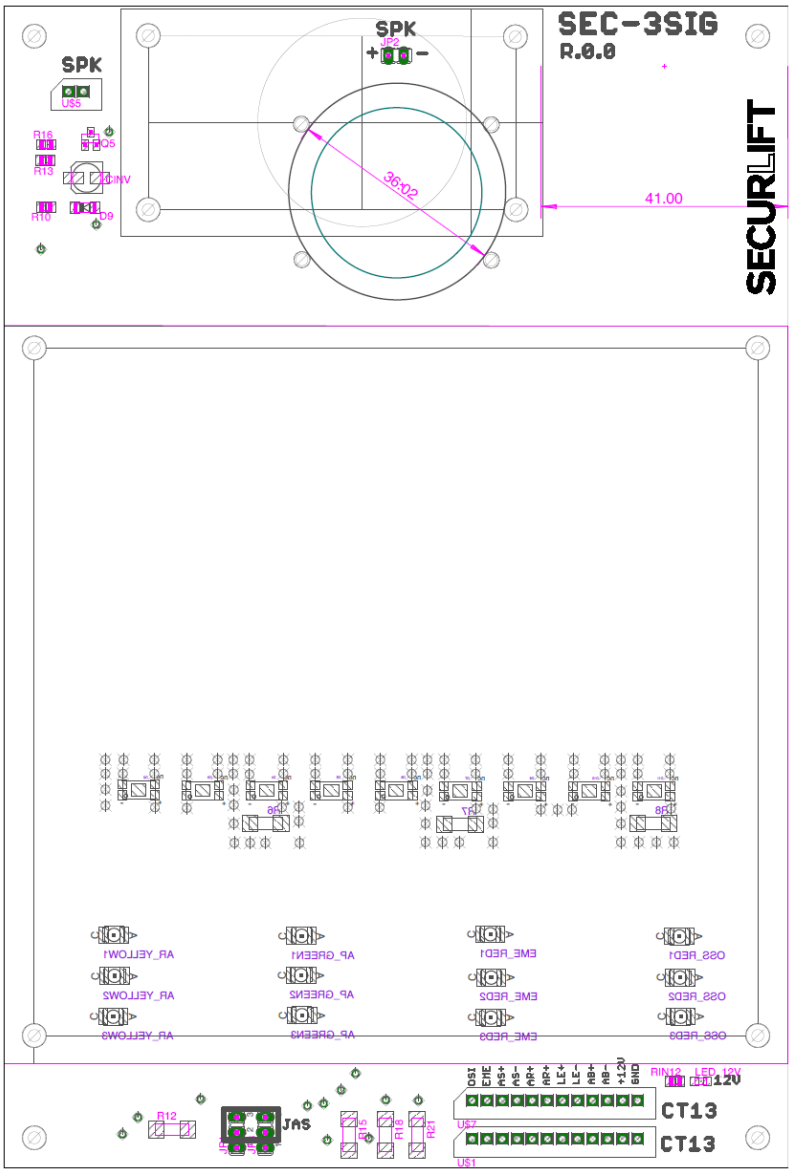
CT13

1	**OSI**	●	Out Of Service output
2	**EME**	●	Emergency output
3	**AS**	●	ALARM SENT input **+**
4	**AS**		Alarm Sent **-**
5	**AR**	●	ALARM RECEIVED input **+**
6	**AR**		Alarm Received **–**
7	**LE**	●	CAR EMERGENCY LIGHT input **+**
8	**LE**		Car Emergency Light **–**
9	**AB**	●	ALARM input **+**
10	**AB**		Alarm **–**
11	+12VDC		
12	–12VDC (GND)		

CT14	**PX1 & PX2**
1 +12VDC	**(car calls IN-OUT)**
2 **AUX1** input	PX1: 1-8 floors side A
3 **AUX2** input	PX2: 9-16 floor side A
4 –12VDC	or 1-8 floor side B
BUS	**SPK**
1 BUS connector for Helpy 2W **+**	1 Loudspeaker output **+**
2 BUS connector for Helpy 2W **–**	2 Loudspeaker output **–**
TFT	
Connecttor for TFT pre-wired display	
CAN1 IN	**CAN1 OUT**
Serial communication connector	Serial communication connector

SEC-3SIG – car signalisation board (R. 0.0)

SEC-3SIG car signalisations board.



CT13		
1	**OSI**	Out Of Service
2	**EME**	Emergency run
3	**AS**	ALARM SENT **+**
4	**AS**	Alarm sent -
5	**AR**	ALARM RECEIVED **+**
6	**AR**	Alarm received **–**
7	**LE**	CAR EMERGENCY LIGHT **+**
8	**LE**	Car emergency light **–**
9	**AB**	ALARM button **+**
10	**AB**	Alarm button **–**
11	+12VDC	
12	–12VDC (GND)	

SPK

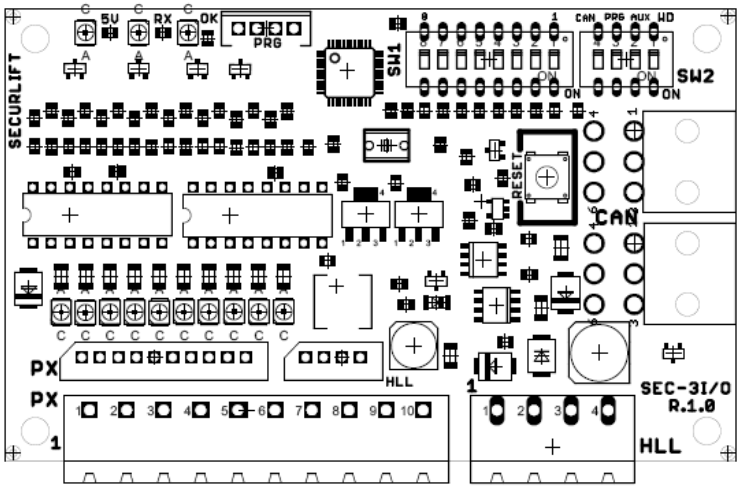
1 Altoparlante **+**
2 Altoparlante **–**

JAS

Selezione polarità Allarme Ricevuto

SEC-3I/O – extension board

SEC-3I/O board is the interface for car calls (over 16 services) or for some special function. Each board collects up to 8 calls. Appropriate setting of dip-switches configures the board function.



LED's

In the following tables all LED symbols are shown with power ON, with car parked at bottom floor, after reset drive has been accomplished.

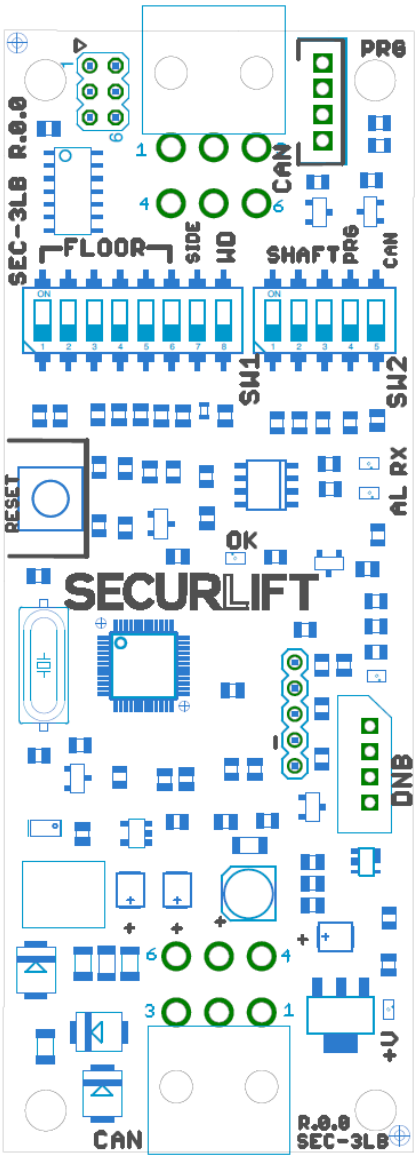
☼ = lit **● = off** **⊙ = blinking**

PX (car calls - dip 3+6 ON)			**PX (car calls - dip 3+6+1 ON)**		
1	●	Car call 1	1	●	Car call 9
2	●	Car call 2	2	●	Car call 10
3	●	Car call 3	3	●	Car call 11
4	●	Car call 4	4	●	Car call 12
5	●	Car call 5	5	●	Car call 13
6	●	Car call 6	6	●	Car call 14
7	●	Car call 7	7	●	Car call 15
8	●	Car call 8	8	●	Car call 16
9	+24 VDC	lamps common	9	+24 VDC	lamps common
10	GND	buttons common	10	GND	buttons common
PX (car calls - dip 3+6+2 ON)					
1	●	Car call 17			
2	●	Car call 18			
3	●	Car call 19			
4	●	Car call 20			
5	●	Car call 21			
6	●	Car call 22			
7	●	Car call 23			
8	●	Car call 24			
9	+24 VDC	lamps common			
10	GND	buttons common			

PX (smoke detector - dip 3 ON)	PX (smoke detector - dip 3+1 ON)
1 ☼ floor 1	1 ☼ floor 9
2 ☼ floor 2	2 ☼ floor 10
3 ☼ floor 3	3 ☼ floor 11
4 ☼ floor 4	4 ☼ floor 12
5 ☼ floor 5	5 ☼ floor 13
6 ☼ floor 6	6 ☼ floor 14
7 ☼ floor 7	7 ☼ floor 15
8 ☼ floor 8	8 ☼ floor 16
9 +24 VDC	9 +24 VDC
10 GND common	10 GND common
PX (smoke detector - dip 3+2 ON)	
1 ☼ floor 17	
2 ☼ floor 18	
3 ☼ floor 19	
4 ☼ floor 20	
5 ☼ floor 21	
6 ☼ floor 22	
7 ☼ floor 23	
8 ☼ floor 24	
9 +24 VDC	
10 GND common	

SEC-3LB – floor node board - Basic

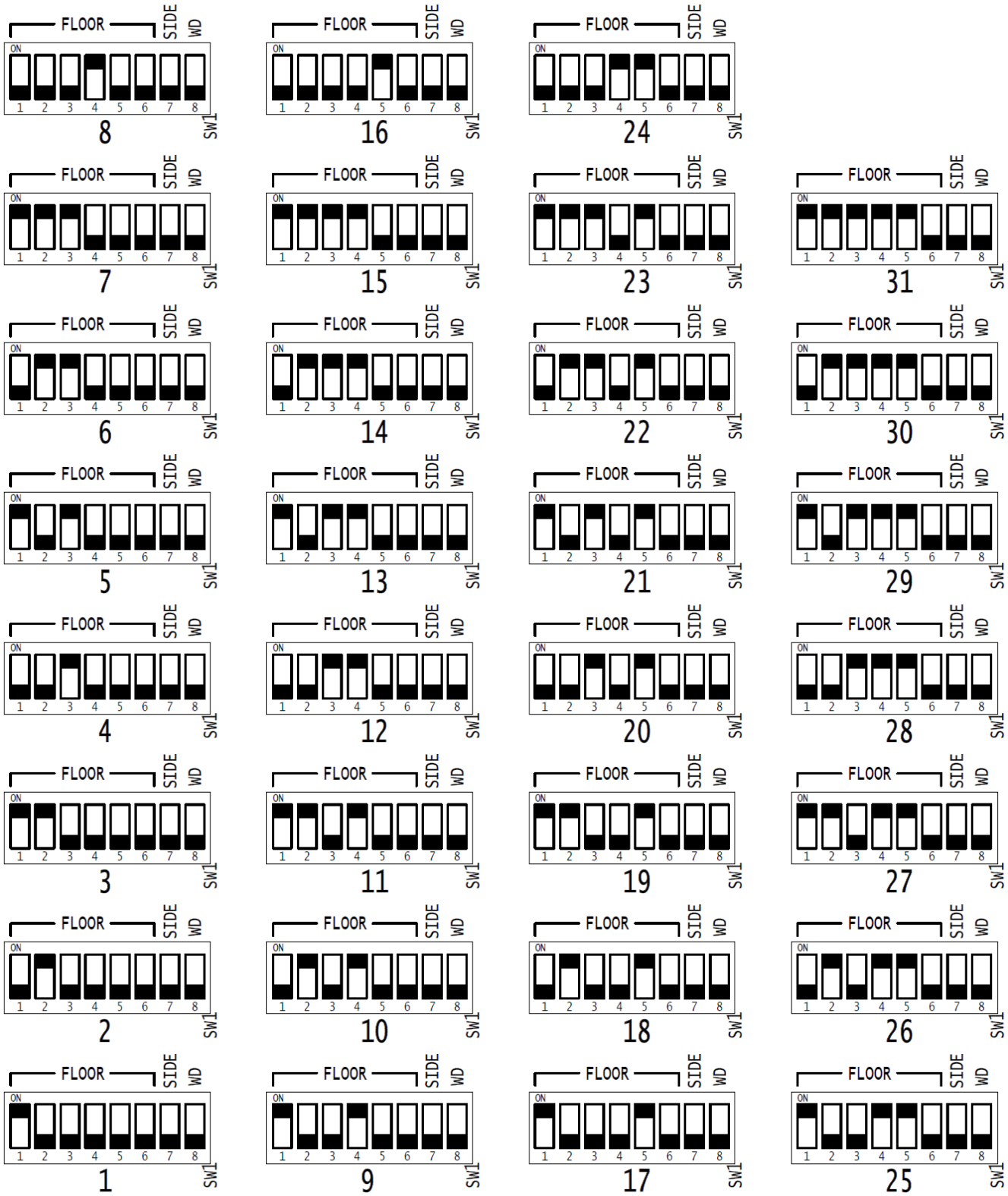
SEC-3LB is the landing interface board. It collects a landing call exclusively.



Dip switch

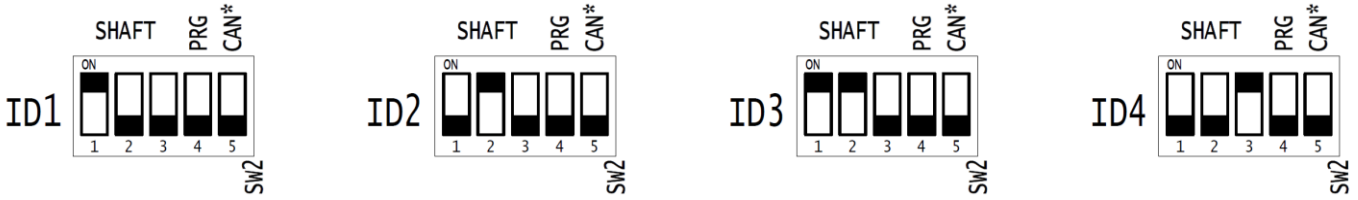
SW1

1 **ID floor - bin 1**
2 **ID floor - bin 2**
3 **ID floor - bin 4**
4 **ID floor - bin 8**
5 **ID floor - bin 16**
6 **swap input DNB to UPB**
7 **side B selection (if selective openings doors)**
8 **WD** = Watch Dog enable – always **OFF**



SW2

1 **ID lift - bin 1**
2 **ID lift - bin 2**
3 **ID lift - bin 3**
4 **PRG = always OFF**
5 **CAN = * CAN loop closing – refer to electrical drawings, page 90**



LED

Nelle seguenti tabelle tutti i LED sono mostrati con il quadro alimentato, con la cabina parcheggiata al piano più basso, dopo che la procedura di reset è stata completata.

☼ = lit **● = off** **⊙ = blinking**

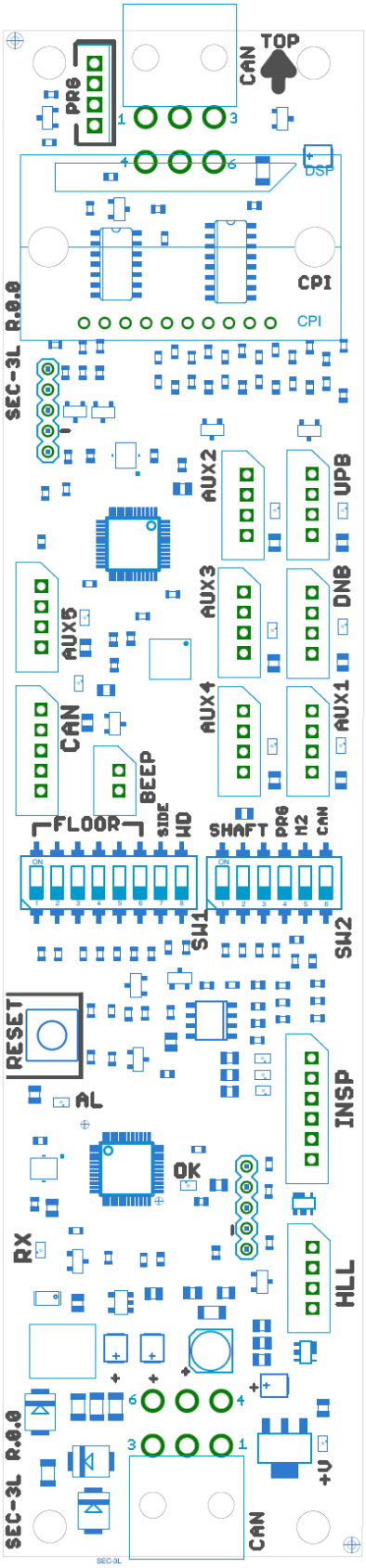
OK = ⊙ Ouputs OK – Blinking also indicate customer code, if present	**RX** = ⊙ **AL** = ● Serial communication alarm **+V** = ☼

Connectors

CAN UP (supply and serial link)	CAN DN (supply and serial link)
1 **CAN H**	1 **CAN H**
2 **CAN L**	2 **CAN L**
3 +24 VDC	3 +24 VDC
4 GND	4 GND
5 +24 VDC	5 +24 VDC
6 GND	6 GND
DNB (down button)	
1 **DOWN** button	
2 **DOWN** call registered	
3 +24 VDC	
4 GND	
If dip SW1/6 = ON	
DNB input switch to:	
1 **UP** button	
2 **UP** call registered	
3 +24 VDC	
4 GND	
Use this function with Down Collective logic, for calls at 0 or underground floors	

SEC-3L – floor node board - Extended

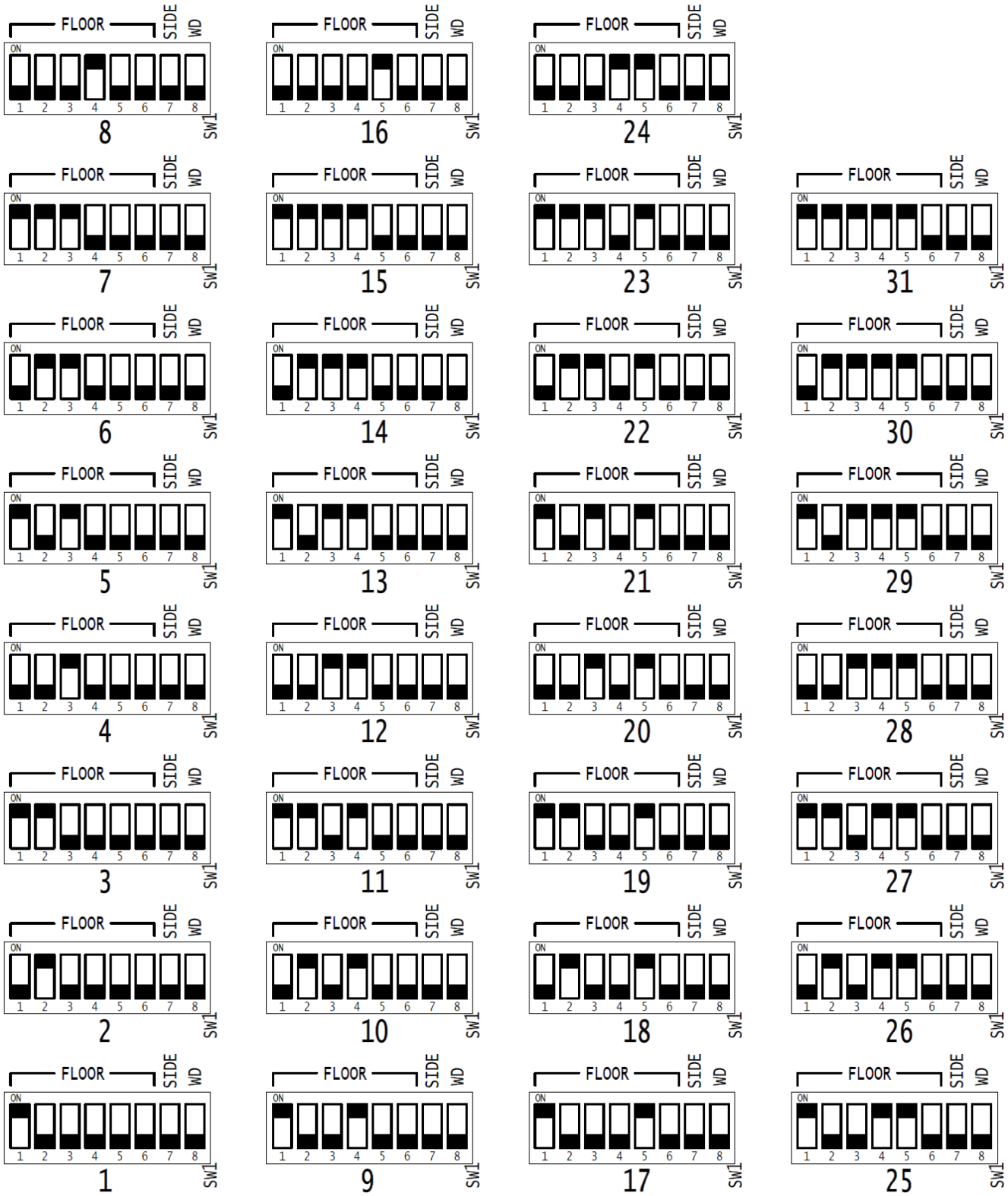
SEC-3L is the landing interface board. It collects landing calls, key switches and various options, and drives all landing signalisations.



Dip switch

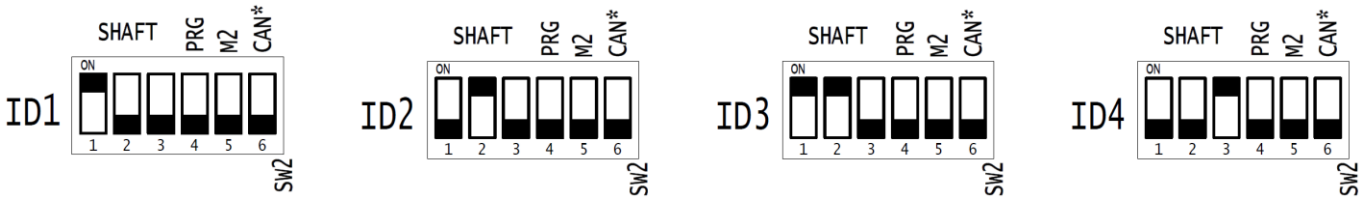
SW1

1 **ID floor - bin 1**
2 **ID floor - bin 2**
3 **ID floor - bin 4**
4 **ID floor - bin 8**
5 **ID floor - bin 16**
6 **Pit Inspection Box function**
7 **side B selection (if selective openings doors)**
8 **WD** = Watch Dog enable – always **OFF**



SW2

1 **ID lift - bin 1**
2 **ID lift - bin 2**
3 **ID lift - bin 3**
4 **PRG = always OFF**
5 **M2 OFF = micro 1 programming**
ON = micro 2 programming
6 **CAN = * CAN loop closing – refer to electrical drawings, page 90**



LED

In the following tables all LED symbols are shown with power ON, with car parked at bottom floor, after reset drive has been accomplished.

☼ = lit **● = off** **⊙ = blinking**

OK = ⊙ Ouputs OK – Blinking also indicate customer code, if present	**RX** = ⊙ **AL** = ● Serial communication alarm **+V** = ☼

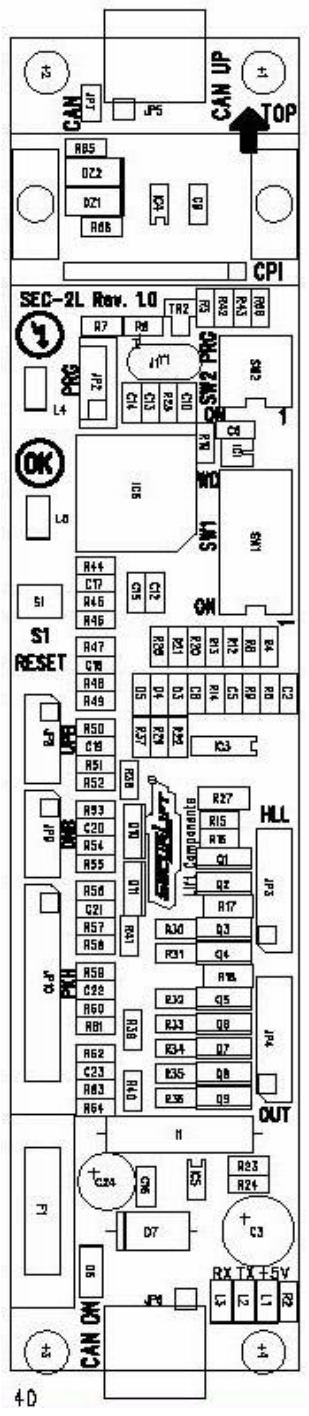
Connectors

- **PRG** = software downloading
- **CPI** = car position indicator interface board

CAN UP (supply and serial link)		**CAN DN (supply and serial link)**	
1	**CAN H**	1	**CAN H**
2	**CAN L**	2	**CAN L**
3	+24 VDC	3	+24 VDC
4	GND	4	GND
5	+24 VDC	5	+24 VDC
6	GND	6	GND
CAN (serial link for display)		**BEEP (EN 81-70)**	
1	**CAN H**	1	**BEEP +**
2	**CAN L**	2	**BEEP -**
3	GND		
4	+24 VDC		
5	GND		
UPB (up button)		**DNB (down button)**	
1	**UP** button	1	**DOWN** button
2	**UP** call registered	2	**DOWN** call registered
3	+24 VDC	3	+24 VDC
4	GND	4	GND
AUX1		**AUX2**	
1	**OSS** Out Of Service key	1	**LOL** Call Locking key
2	**OSI** Out Of Service signalisation	2	**HSL** Car Here signalisation
3	+24VDC	3	+24VDC
4	GND	4	GND
AUX3		**AUX4**	
1	**PRL** Priority call	1	**VIS** Visitors command
2	Fire signalisation	2	Priority/Visitors signalisation
3	+24VDC	3	+24VDC
4	GND	4	GND
AUX5		**HLL**	
1	**FET/FEB** Floor Extension call	1	**LAL** **UP** direction arrow
2	floor extension call registered	2	**LAL** **DOWN** direction arrow
3	+24VDC	3	+24VDC
4	GND	4	GND
INSP (pit inspection box)			
1	**INSP input**		
2	**UP** input		
3	**DOWN** input		
4	GND		
5	+24VDC		
6	GND		

SEC-2L – floor node board

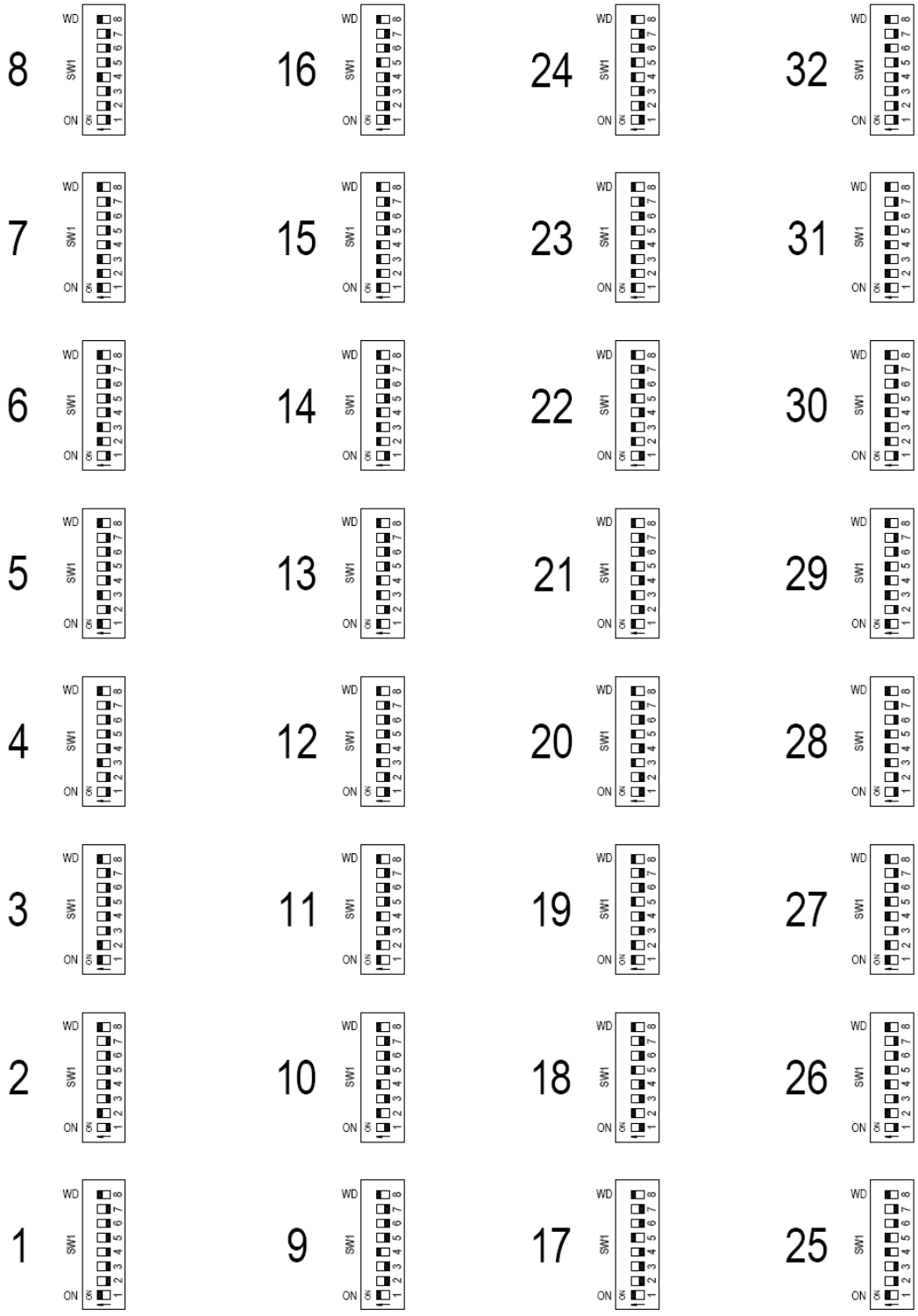
SEC-3L is the landing interface board. It collects landing calls, buttons and key switches, and drives all landing signalisations.



Dip switch

SW1

1 **ID floor - bin 1**
2 **ID floor - bin 2**
3 **ID floor - bin 4**
4 **ID floor - bin 8**
5 **ID floor - bin 16**
6 **Pit Inspection Box function**
7 **side B selection (if selective openings doors)**
8 **WD** = Watch Dog enable – always **ON**



SW2

1 **ID lift - bin 1**
2 **ID lift - bin 2**
3 **ID lift - bin 3**
4 **PRG = always OFF**

ID1 

ID2 

ID3 

ID4 

Jumper

CAN = REFER to installation drawings – page 90.

LED's

In the following tables all LED symbols are shown with power ON, with car parked at bottom floor, after reset drive has been accomplished.

☼ = lit **● = off** **⊙ = blinking**

↯	=	● Ouputs overload	**RX**	=	⊙	
OK	=	☼ outputs OK	**AL**	=	●	serial communication alarm
			+5V	=	☼	

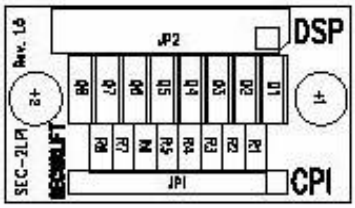
Connectors

- **CAN UP – CAN DN** = serial connection to controller and/or to other floor nodes
- **CPI** = car position indicator interface board
- **PRG** = software downloading
- **UPB – DNB** = connection to landing call buttons
- **PKH** = option inputs
- **OUT** = option outputs
- **HLL** = hall lanterns and gong output

CAN UP (supply and serial link)	**CAN DN (supply and serial link)**
1 **CAN H**	1 **CAN H**
2 **CAN L**	2 **CAN L**
3 +24 VDC	3 +24 VDC
4 GND	4 GND
5 +24 VDC	5 +24 VDC
6 GND	6 GND
UPB (up button)	**DNB (down button/call)**
1 up CALL input (+)	1 down CALL input (+)
2 up REGISTERED output (-)	2 down REGISTERED output (-)
3 up REGISTERED (+24 VDC)	3 down REGISTERED (+24 VDC)
4 up CALL (GND)	4 down CALL (GND)
PKH (option inputs)	**OUT (option output)**
1 **PRL** – Priority call	1 **OSI** – Out of Service indication
2 **OSS** – Out of Service key	2 **HSL** – car Here indication
3 **LOL** – call disable	3 Fireman's drive indication
4 **VIS** – visitors delivery	4 **FLD** – Full Load indication
5 **FET/FEB** – Floor Extension (Top/Bottom) Car preference call	5 **BEEP** – EN 81-70
6	6 +24 VDC
7 +24 VDC	
8 GND	
HLL (hall lanterns and gong output)	**NOTE**
1 **LAL** - UP lantern	if board SEC-2L is used to connect the pit inspection box (sw. rev. 02.08+):
2 **LAL** - DOWN lantern	**SW1/1 = ON**
3 **FET/FEB** – Car preference call accepted	**SW1/6 = ON**
4 **VIS** – visitors delivery	**SW1/8 = ON**
5 +24 VDC	
6 GND	Input connector PKH
	1 **normal/inspection**
	2 **UP direction**
	3 **DOWN direction**
	4 **Not used**
	5 **Not used**
	6
	7 +24 VDC
	8 GND
	ATTENTION:
	SEC-2L DEDICATED TO PIT INSPECTION BOX ONLY
	DO NOT USE IT FOR OTHER FUNCTIONS!

SEC-2LPI – Landing display board

SEC-2LPI is the car position indicator driver at landings, when serial landing connection is used. It fits on the SEC-2L board by connector CPI.

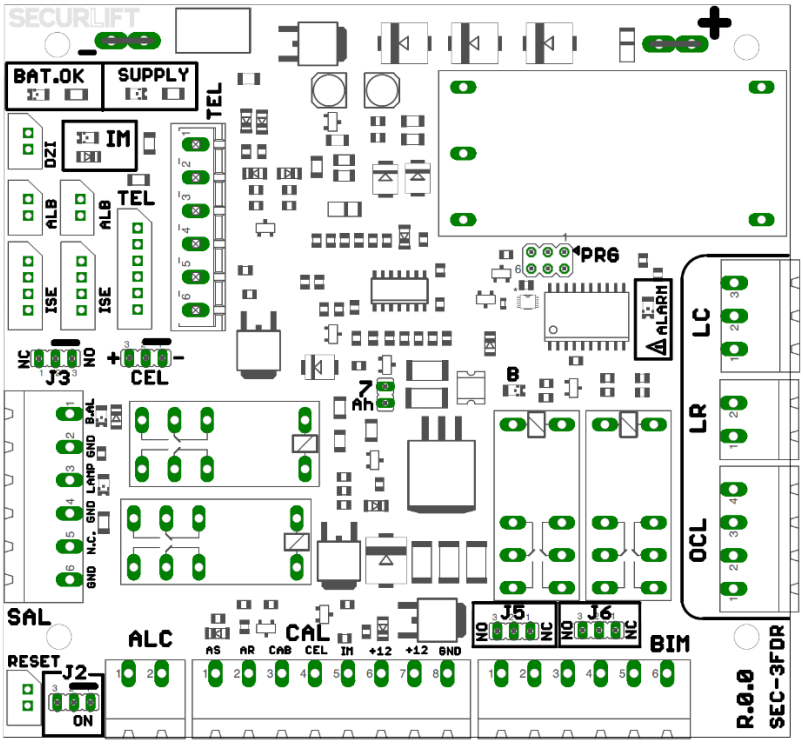


DSP (car position output)

1	**a**	segment a	bin 1	dec 1st floor
2	**b**	segment b	bin 2	dec 2nd floor
3	**c**	segment c	bin 4	dec 3rd floor
4	**d**	segment d	bin 8	dec 4th floor
5	**e**	segment e	bin 16	dec 5th floor
6	**f**	segment f	bin 32	dec 6th floor
7	**g**	segment g		dec 7th floor
8	**G**	segment G		dec 8th floor
9		+24 VDC		
10		GND		

SEC-3FDR – alarm battery charger

SEC-3FDR is the alarm interface board, and provides for battery charge and check.



Jumper

RESET = if jumpered for at least 2 seconds it carries out the start-up procedure and cancels the alarms signaled.

7Ah= selects the battery size to be charged:

- open = 2.2 Ah
- closed = 7 Ah

CEL = selects the car emergency light output polarity :

- 1-2 = negative output
- 2-3 = positive output

J2 = select the function for the cabin emergency light:

- 2-3 = emergency light activated in case of power failure - **do not move**

J3 = selects the alarm contact to be interfaced with autodialler device (TEL/3 – TEL/4):

- 1-2 = N.C. contact
- 2-3 = N.O. contact

J5 = selects output 1 (NO / NC) of the BAT relay. OK (BIM / 1 - BIM / 2)

J6 = selects output 2 (NO / NC) of the BAT relay. OK (BIM / 3 - BIM / 4)LED's

LED

symbols are shown with power ON.

BATT. OK	☼	battery status check
SUPPLY	☼	light mains supply OK (230 VAC)
ALARM	●	Report an error (list of error codes below)
B	☼	Battery control relay
IM	☼	CAR AT FLOOR signal

Battery check

- After 8 seconds from switching on the board, the "BATTERY PRESENCE" test starts.
- After 20 seconds from switching ON the board, the quick test (2 minutes) "BATTERY DISCHARGE"starts.
  If ok, the next full tests will start at 72 hours intervals.
- After 5 minutes from switching ON the board, the "PRESENCE Vac" test starts.
  If ok, the next tests will start at 30 minutes intervals.

Allarms codes

The errors are signaled by the ALARM led. The number of flashes determines the type of error detected.

1. ☼ **No battery**
2. ☼☼ **Battery does not charge**
3. ☼☼☼ **Battery faulty**
4. ☼☼☼☼ **Battery overload**
5. ☼☼☼☼☼ **No VAC (mains power supply)**

Connectors

DZI (car at floor indication)				
1	+	☼	positive LED out	
2	-	●	negative LED out	
ALB (alarm button)				
1	**PH A**		alarm button	N.O.
2	+12 VDC			
TEL (autodialler)				
1	**TEL/1**		intercom 1	
2	**TEL/2**		intercom 2	
3			alarm output	NO
4			"	"
5	+12VDC		autodialer supply	
6	-12 VDC			
CAL (car alarm wiring)				
1	**ISE/1**		BUS+	
2	**ISE/2**		BUS-	
3	**CAB**		alarm button	NO
4	**CEL**		emergency light	
5	**IM**		car at floor sensor	NO
6	+12 VDC			
7	+12 VDC			
8	-12 VDC			
LR (car light relay pre-wiring)				
1/2	**LR/1**		RLC relay contact	NC
BIM (various relays)				
1/2	contact 1 relay B (BAT.OK)			
3/4	contact 2 relay B (BAT.OK)			
5/6	IM sensor output- "car at floor"			NO

ALC (alarm output)			
1/2	**ALC**	alarm output	N.O.
ISE (intercom)			
1	**ISE/1**	intercom 1	
2	**ISE/2**	intercom 2	
3	+12VDC		
4	-12 VDC		
SAL (shaft alarm wiring)			
1	**ABE**	alarm bell	
2	-12 VDC		"
3	**ALI**	alarm signalisation at landings	
4	-12 VDC		"
5	+12VDC		
6	-12 VDC		
OCL (car light)			
1	**OCL/1**	NEUTRAL car light	
2			
3	**OCL/3**	LIVE - automatic car light	
4	**OCL/4**	LIVE - permanent car light	
LC (230 VAC supply)			
1	**LC/1**	NEUTRAL	
2			
3	**LC/3**	LIVE 230 VAC	

Manual rescue operation instruction

AVAILABLE on BRUSHLESS GEARLESS only

Rescue operation has to be performed by trained and qualified personnel!

1. Check that all the landing and cabin doors are closed
2. Open the **IG** mains switch (fig.1) and, if present open **IMT** switch also

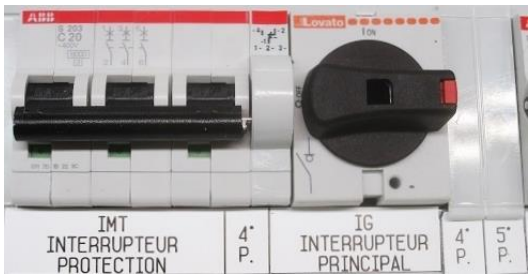


fig. 1

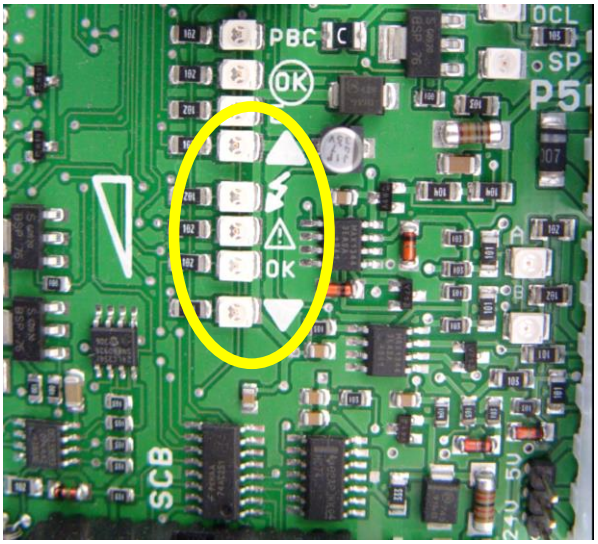
3. Turn and hold **CFE** key switch (fig.2)

fig. 2

   a. the emergency sequence start
   b. the controller is supplied and, after verifying time:
      i. if the car is at a floor level the brake will not open, and the doors will be opened
      ii. If car is not at a floor level and the doors are open, then the system will force a door closing command
   c. when doors will be closed, and all the safety circuit is closed the brake will open, and the car will move in the weight favourable direction

4. With FUJI inverter

a. Verify speed and direction by checking led's on SEC-3Q board (fig.3)



▲ = UP direction
speed ALARM
△ = speed pre-alarm
OK = speed OK
▼ = DOWN direction

fig.3

   i. If speed exceeds safety level **= speed ALARM** car will be automatically stopped; if floor level has not been reached do not leave CFE key: brake will open again, may be several times, until floor level will be reached.
   ii. in case of danger press red STOP button **PSE**

b. once arrived at nearest floor the car will automatically stop, and doors will open
c. leave **CFE** key then evacuate passengers
d. close and lock all the doors
e. inform the maintenance company

5. With VACON inverter

a. Verify speed and direction by checking the VACON keypad
   i. if speed exceeds safety level brake will automatically close; if floor level has not been reached do not leave the key: brake will open again, may be several times, until floor level will be reached
   ii. in case of danger press red STOP button **PSE**
b. once arrived at nearest floor the car will automatically stop, and doors will open
c. leave **CFE** key then evacuate passengers
d. close and lock all the doors
e. inform the maintenance company

HELPY 2W-LCP – Telephone dialler

Quick programming

- Set telephone switch to "T" (tone)

Enter programming mode

 *** 0 #**

79 01 *language selection = English*
79 07 *language selection = Dutch*

Telephone numbers

21 01 1 2 . . . … *1st telephone number …* **#**
21 **02** 1 2 . . . … *2nd telephone number …* #
… … … … …
21 **12** 1 2 . . . … *12th telephone number …* #

Identification message recording

71 01 ♫ *… talk …* ♫

Listen recorded message

72 01 *… listen …*

Automatic answer

77 1 *sets immediate link*
78 1 sets reset by code
65 9 *max. speech time*
66 0 *telephone network*

Options

40 02 11 *car roof unit config.*
40 03 11 *pit unit config.*

Battery alarm

21 01 22 *. . . battery alarm telephone number* **#**
52 0 *disable internal alarm*
55 5 *IN2 enable*
9005502# *battery alarm*

Quit programming mode

*** 0 #** 

To restore factory setting:

 *** 0 # 99 * 0 #** 

To listen to the firmware revision

 *** 0 # 33 #** 

GSM 500-NET unit connection (optional)

Remove connector TEL on battery charger board SEC-2FDR

- open GSM module and autodialler unit
- place the antenna on GSM module
- install SIM card inside GSM module
- connect GSM module to autodialler by the supplied cord (schematics, page 13)
- close back GSM module and autodialler

Connect back connector TEL on battery charger board SEC-2FDR

Use of device

Interphone communication
Lift handset and talk normally to the car.

Active alarm cancelling

 *** 0 #** 

Help request from elevator
Answer the call and listen to the elevator identification message.
5 *to repeat identification message*
9 *to reset alarm status*

Remote-to-car communication
Dial the elevator telephone number
Listen to identification message.
*** 0 # 11** *to talk with the car*
 *to finish communication*

For further instruction on advanced use and programming please refer to manual of ESSE-TI.

Legenda

Electrical drawings use the following abbreviations:

DEVICES

abbreviation	description	notes
12:H	HIGH speed valve	
12:N	DOWN valve	
ABE	ALARM bell	
ALM-GER	Gervall UCM supply unit	
ALS	ALARM signal at landings (legge 13)	
AM	SAFETY circuit braker	
~~AP~~	~~Interruttore magneto/termico PAWL DEVICE~~	
~~ARP~~	~~Minicontattore PAWL DEVICE~~	
AUX	BALAUSTRADE contact	
BRK	Manual BRAKE lever contact	
CAB	Car ALARM button	
CEG	Apron bypass contact	
CEL	Car EMERGENCY LIGHT	
CFE	Emergency Brake opening key switch	
CFE	DYNATECH A3 release key switch	
CG	Apron contact	
CH.	Landing loks supervision contact (additional)	EN 81-21
CL:A	A side door CLOSE contactor	
CL:B	B side door CLOSE contactor	
CRA	Door open braking contact	
CRC	Door close braking contact	
CSD1	Bistable sensor for down transit speed check	
CSU1	Bistable sensor for up transit speed check	
DBY	BYPASS switch	
DCB	DOOR CLOSE button	
DOB	DOOR OPEN button	
~~DP~~	~~Minicontattore blocco Alta Velocità Discesa~~	
DSV	Bucher DSV-A3 valve	
DZI	CAR AT FLOOR signal	
DZSM	Door Zone Safety Module	
EA	HIGH speed valve	
EB	DOWN – LOW speed valve	
~~EBD H~~	~~Dispositivo emergenza x olio~~	
~~EBD T~~	~~Dispositivo emergenza x fune~~	
EME	Segnalazione IN EMERGENZA	
EMM	Emergency contactor	
EMM	Mains/Emergency swap contactor – for SEC-3SULLY board	
ESS	SOFT STOP valve	
EU	Landing locks control device	EN 81-21
EU	Breaker and release coil for landing locks control device	
F..	Fuses	
FAN	FAN command	
~~FCA1~~	~~Fine corsa addizionale~~	~~EN 81-21~~

FCF:D	DOWN INSPECTION limit switch (pit)	EN 81-21
FCF:U	UP INSPECTION limit switch (pit)	EN 81-21
FCM	INSPECTION limit switch	EN 81-21
FCM:D	DOWN INSPECTION limit switch (car)	EN 81-21
FCM:U	UP INSPECTION limit switch (car)	EN 81-21
FCU	ADDITIONAL INSPECTION limit switch	EN 81-21
~~FCU:U~~	~~Fine corsa ulteriore discesa~~	~~EN 81-21~~
FID	FIRE RECALL switch	
FLS:D	DOWN final limit switch	
FLS:U	UP final limit switch	
FMK	FIA module contact	
FRD	FIREMAN'S DRIVE SWITCH	
GRR	Gervall UCM emergency supply switch	
HIC	ALARM RECEIVED signal	
HRS	ALARM SENT signal	
ID	DOWN monostable sensor	
IDP	Door circuits differential switch	
IDS	Safety circuits differential switch	
~~IF~~	~~Impulsore monostabile EMERGENZA Fermator~~	
IG	MAINS power switch	
IGE	Emergency power switch	
ILC	CAR LIGHT main switch	
ILV	SHAFT LIGHT main switch	
IM	Car at floor sensor	
IMT	Magnetic/Thermic mains switch	
INSP.	INSPECTION drive switch	
ISE C	Car intercom	
ISE L	Lobby intercom	
ISE MR	Machine room intercom	
ISE P	Pit intercom	
ISE PC	Fireman's car intercom	
ISE PP	Fireman's landing intercom	
ISE R	Car roof intercom	
IU	UP monostable sensor	
IZ	DOOR ZONE monostable sensor	
KAK	FIA module contact	EN 81-21
KD	DOWN contactor	
KDB	Dynamic braking contactor (brushless/gearless)	
~~Ke~~	~~Contattore EMERGENZA~~	
~~Ke2~~	~~Contattore ausiliario EMERGENZA~~	
KF	BRAKE contactor	
~~KFP~~	~~Contattore ausiliario FRENO~~	
KH	HIGH speed contactor	
KINSP	Inspection Contactor	
KL	LOW speed contactor	
~~KLF~~	~~Relè controllo PUNTONE in fossa~~	~~EN 81-21~~
~~KLT~~	~~Relè controllo PARAPETTO mobile~~	
KML	Micro-levelling contactor	
KP	MAIN contactor	

KP1	Auxiliary contactor	
~~KR1~~	~~Relè controllo SICUREZZE~~	~~EN 81-21~~
KS	STAR contactor	
KT	DELTA contactor	
KTE	Emergency voltage contactor	
KTN	Normal voltage contactor	
KU	UP contactor	
L10	Blain A3 valve	
~~LF~~	~~PUNTONE in fossa~~	
LKP	Car LOCKING contact	
LOC...	Car call disable contact/key/switch	
~~LT~~	~~Contatto parapetto mobile~~	~~EN 81-21~~
~~LV~~	~~Segnalazione OK in fossa~~	
M..	Power terminal	
MAN:T	INSPECTION contactor (EN 81-21)	
~~MER~~	~~Dispositivi controllo SERRATURE porte piano~~	
~~MK~~	~~Bobina modulo FIA~~	~~EN 81-21~~
~~MLD~~	~~Contatto MINIMO CARICO~~	
NORM	Normal mode relay	
OP:A	A side door OPEN contactor	
OP:B	B side door OPEN contactor	
OSG	OVERSPEED GOVERNOR contact	
OSI	OUT of SERVICE signal	
OSS	OUT of SERVICE switch	
OST	Overspeed governor TEST connector	
~~P~~	~~Pressostato di minima~~	
PAL	Pit ALARM button	
PE	Ground terminals	
PEE	Emergency drive enable button	
PHR	Phase reversal/failure protection device	
PRC	Car priority switch	
PS	Pressure contact	
PST	Pit Stop switch	
PT	Retiring ramp contactor	
~~PWD~~	~~Pawl device~~	
R30	Speed < 0.30 m/s relay	
RAB	Car roof ALARM button	
RB	RECALL drive enable button	
RCLC	Car light supervision relay	
RD	DOWN bistable synchronisation sensor	
RDF	RECALL drive switch	
RE	Emergency drive relay	
REU	EU (landing locks control device) release relay	
RFA	ALARM FILTER relay	
RFE	Montanari A3 relay	
RI	INSPECTION relay	
RID	DOWN sensor relay	
RIU	UP sensor relay	
RIZ	DOOR ZONE relay	

~~RKF~~	~~Relè controllo FRENO~~	
RLC	Car light relay	
RLV	Shaft light relay	
RMAN	INSPECTION relay	
~~ROS~~	~~Relè FUORI SERVIZIO~~	
RP	Fireman's drive relay	
RR:A	A door BRAKING RESISTOR	
RR:B	B door BRAKING RESISTOR	
RRCH	EU delay Timer	
RSENS	DYNATECH A3 sensor relay	
RSIC	Dynatech A3 safety circuit relay	
RTC	Overspeed governor rope tension contact	
RU	UP bistable synchronisation sensor	
RUN	INSPECTION enable button	
RVC	FAN/LIGHT relay	
~~SAM~~	~~Selettore abilitazione MANUTENZIONE~~	
SEC-2ALM	Safety circuit supply board	
SEC-2ALM1	24VDC supply board	
SEC-2ALM2	24VDC supply board	
SEC-2ALMX	Brake – Retiring Ramp supply board	
SEC-2DOOR	Door board	
SEC-2FDR	Battery charger – alarm board	
SEC-2L	Floor node board	
SEC-2LPI	Landing display driver board	
SEC-2OPT	I/O option board	
SEC-3AUX	Auxiliary relay board	
SEC-3C	Car roof board	
SEC-3EBD	Emergency battery drive	
SEC-3I/O	Calls extension board	
SEC-3Q	Controller mother board	
SEC-3S	Safety circuit interface board	
SEC-3SPEED	Speed supervision board (> 1,6 m/s)	
SEC-3SUPPLY	Supplies and brake control board (gearless)	
SEC-3TRG	COP board	
SEM	Emergency drive unit (hydraulic)	
SGS	SAFETY GEAR contact	
~~SKP~~	~~Contatto modulo FIA~~	~~EN 81-21~~
SKP	FIA module contact	
~~SLS~~	~~Fine corsa manutenzione~~	
~~SM~~	~~Rilevatore fumi ai piani~~	
SST	Soft –Starter device (hydraulic)	
STOP	STOP switch on inspection box	
T	Timer	
T30	Speed < 0.30 m/s contactor	
TD	DOWN contactor	
TD1	Auxiliary DOWN contactor	
TDR	Emergency inverter logic supply relay	
TE	Emergency contactor	
TFC	Photocell contactor	

TFP	Brake – Retiring Ramp transformer	
TH	HIGH speed contactor	
THR	Thermal relay	
THR:H	Thermal relay for high speed winding	
THR:L	Thermal relay for low speed winding	
TINSP	Inspection contactor	
~~TKAK~~	~~Minicontattore controllo modulo FIA~~	
TKAK	FIA module contact	
TMP	SOFT STOP contactor	
TP	Door transformer	
TPT	3phase retiring ramp contactor	
TR	Re-levelling contactor	
~~TRA~~	~~Trasformatore alimentazione PAWL DEVICE~~	
~~TRC~~	~~Trasformatore alimentazione centralina Moris~~	
TRD	DOMINO Transformer	
TRF	BRAKE transformer	
TRG	Gervall UCM transformer	
TRM	Main transformer	
TRP	Door transformer	
~~TSD~~	~~Contattore SICUREZZE STATICHE~~	
TV	Cooling transformer	
TVM	SOFT STOP contactor	
UCM-100	GERVALL safety module	
VD	DOWN valve	
VD2	A3 DOWN valve	
VH	HIGH speed valve	
VHD	DOWN – HIGH speed valve	
VHU	UP – HIGH speed valve	
VLD	DOWN – LOW speed valve	
VLU	UP – LOW speed valve	
VMD	DOWN valve	
VML	Levelling valve	
VMP	SOFT STOP valve	
VST	STAR/DELTA valve; or START valve; or SOFT STOP valve	
VU	UP valve	
VU/D	UP/DOWN valve	
X	Buffer contact	

Car connectors

abbreviation	description	note
CPC	Car door contact	
CAN1 IN	Controller-Car serial connection	
FPA	A door braking	
FPB	B door braking	
ISE	Car Intercom – Alarm button – Emergency Light – Elarm Received signal	
LKP	Car Locking device	
MPA	A door supply	
MPB	B door supply	

OCL	Car light/fan supply	
PT	Retiring ramp	
RLV/2	Car roof lighting	
SBM	Inspection box safeties	
SGS	Safety gear switch / Final limit switch in car	
SM	Monostable Magnetic Switches: • Shaft count (IU - ID) • Car at floor (IM) • Door Zone (IZ; IZ1; IZ2)	
SPK	Speech unit loudspeaker	

Shaft Connectors

abbreviation	description	note
ABE	Alarm bell	
AL	Pit alarm button	
ALS	Landing alarm signal	
BP	Landing call buttons	
BRK	Manual brake contact	
BZ	Buzzer	
CP	Landing locks contact	
DIA	Car direction signals	
DNB	Down call buttons	
DSP	Car position indication	
FID	Fire recall command	
FLS	Final limit switch	
FRD	Fireman's drive command	
HLL	Hall lanterns + gong	
ISE	Intercom	
LDC	Pit LADDER switch	
LV	Pre-wired shaft light	
OSI	Out of service signal	
OSS	Out of service command	
OSV	Overspeed governor remote command	
OUT	Various outputs	
P1	Pit INSPECTION box signals	
PKH	Various inputs	
PM	Swing doors preliminary contacts	
PR	Car here signals	
PST	Pit stop switch	
RTC	Overspeed governor rope tension contact	
UPB	UP call buttons	
X	Buffer contact	

Software revisions compatibility

SEC-3Q board
All software revisions are compatible between them. Difference between a younger and an older version is the addition of some functionality, or some bug correction.
In few cases special versions are released, especially designed to specific and special installation. On these particular installations older or younger version are absolutely not compatible, just the original revision can be installed.
RULE: for controller software production revision or a younger one must be used. In case a special software is installed, just that specific revision exists and can be installed.

Protected Software - security code
The code protection has been available since rev. 02.50b. Code protection involves only systems produced with a code (security code).
WARNING! By downgrading, i.e. installing a version prior to 02.50b on a system with protected software, the system gets blocked "WITHOUT MOTOR CODE", and access to menu by a password is also prevented. After the correct version is restored, it will be necessary to enter the menu with a coded keypad, and enter the motor code in parameter 02.02. This allows protection against unauthorized unlocking attempts.
RULE: it is not possible to delete protection code from a protected board.
Protected boards are SEC-3Q, SEC-3C, SEC-3TRG e SEC-2L. All other boards do not have software protection.
RULE: installation with protected software must have all four boards (SEC-3Q, SEC-3C, SEC-3TRG e SEC-2L) with the right code. If a board without code, or with a different code is inserted the lift gets blocked with “ERROR SECURITY board"

SEC-3C board
- All 02.xx revision are compatible between them.
- All 04.xx revision are compatible between them.
- Revisions 02.xx and 04.xx are not compatible between them.

Switching from 02.xx to 04.xx happened when absolute shaft positioning ELGO Limax was implemented, thus needing CAN speed modification.

SEC-3TRG board
Same rule applies to SEC-3C: CAN speed modification passing from 02.xx to 04.xx.

WARNING! CAN bus speed modification applies to SEC-3C to SEC-3TRG connection, whilst speed is not changed between SEC-3Q and SEC-3C.
This is the reason why controller keeps revision index at 02.xx, but CAR and COP passed from 02.xx to 04.xx.
RULE: never mix revisions 02.xx with 04.xx in the CAR-COP root, because a CAB conflict will block the lift. Because of the same reason never install, on a lift with ELGO Limax, a CAR or a COP board with revision 02.xx.

SEC-3IO board
SEC-2OPT board
SEC-2L 02.xx board
Those boards are all compatible between them. Sam erule of SEC-3Q applies: always use same or younger software revision.

SEC-3KBD
Revisions 02.xx and 04.xx exist.
Switching from 02.xx to 04.xx happened with the implementation of protected (security code).
All 04.xx are back-compatible with 02.xx , but not vice-versa.
RULE: a 04.xx tool is compatible with all existing controller revisions. Programming tool updating can be made by Securlift exclusively.

Software downloading

It is possible get the needed program from the microcontroller manufacturer web site:

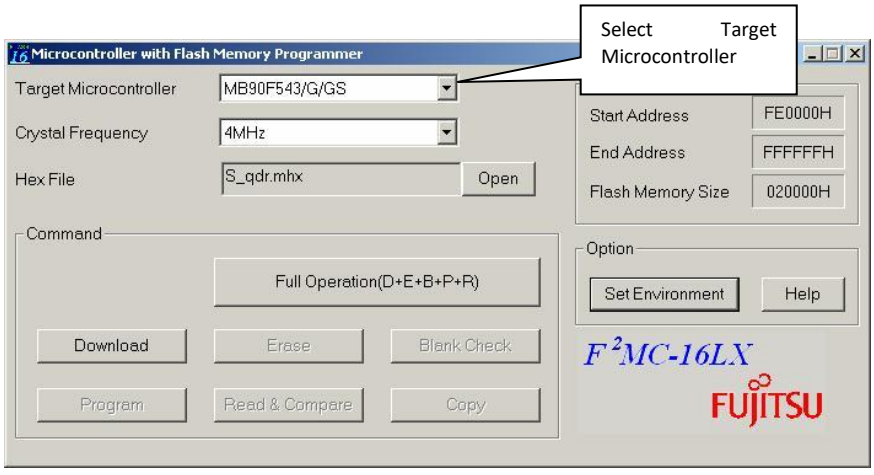
FLASH PROGRAMMER 16FX software for Controller board (SECURLIFT internal use only).
http://www.spansion.com/Pages/mcu_download.aspx?redirect=/EnglishDownloads/EDG/binary/zip/product/microm/tools/downloads/flash/PCW16FX-V01L15.zip

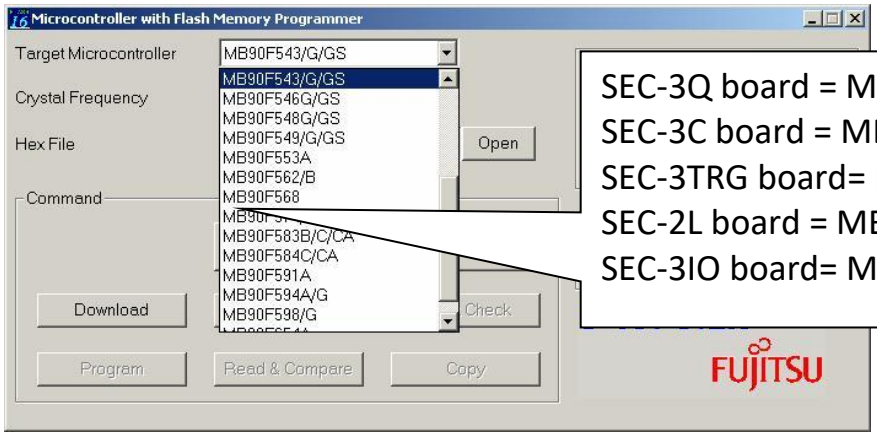
FLASH PROGRAMMER 16LX software for all other boards.
http://www.spansion.com/Pages/mcu_download.aspx?redirect=/EnglishDownloads/EDG/binary/zip/product/microm/tools/downloads/flash/pcw16lx-v01l27.zip

Drivers for the programming cable SEC-2PRG can be downloaded at:
http://www.ftdichip.com/Drivers/CDM/CDM%20v2.12.12%20WHQL%20Certified.exe

SECUR 3 boards are on site programmable for easy updating. To download software please proceed as follows.

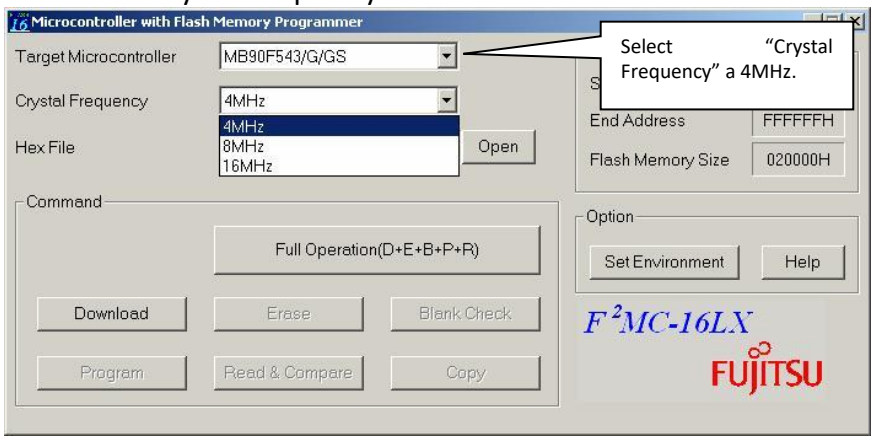
1. Install FLASH FX and LX in the computer
2. Start the correct FLASH.exe program
3. Connect SEC-2PRG cable between computer port (COM) and PRG connector on the board to be programmed
4. While pressing **RESET** button, set the board dip switches as follows:
   - WD = OFF
   - RS = OFF (if present)
   - PRG = ON
   - Release **RESET** button
5. Select the Target Microcontroller





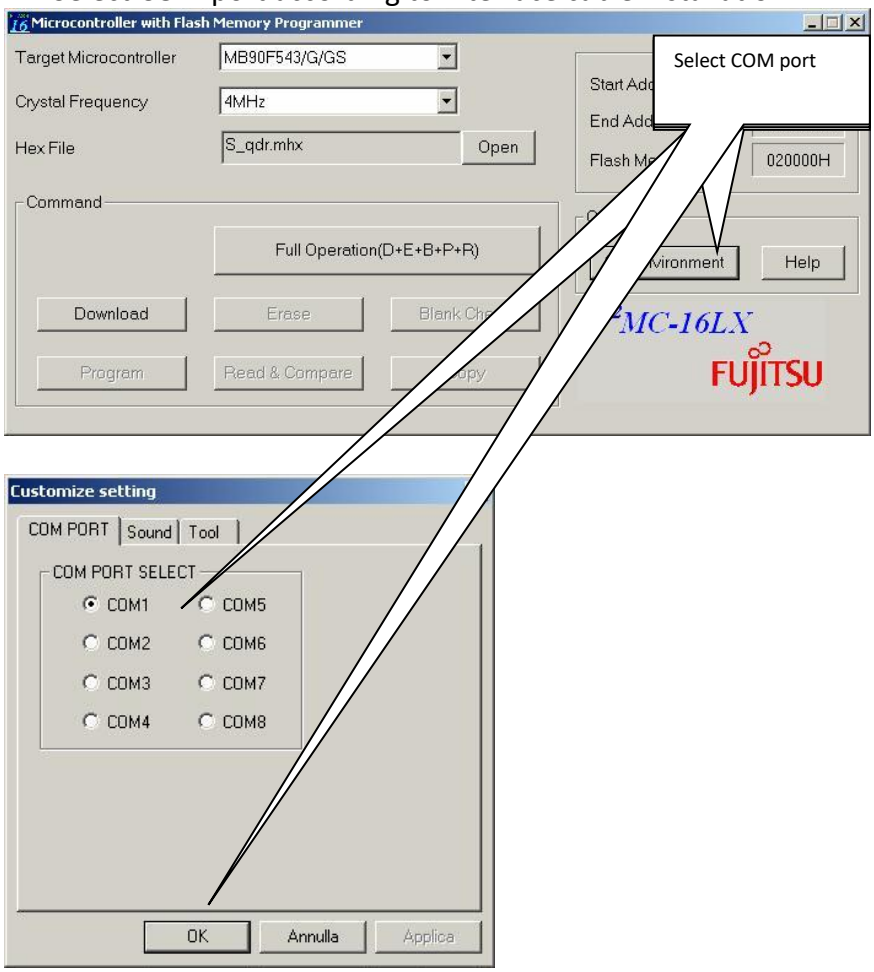
SEC-3Q board = MB96F338R/U/Y
SEC-3C board = MB90F345A/CA/AS/CAS
SEC-3TRG board= MB90F345A/CA/AS/CAS
SEC-2L board = MB90F497/G
SEC-3IO board= MB90F362E/ES/TES

6. Select “Crystal frequency” at 4MHz.



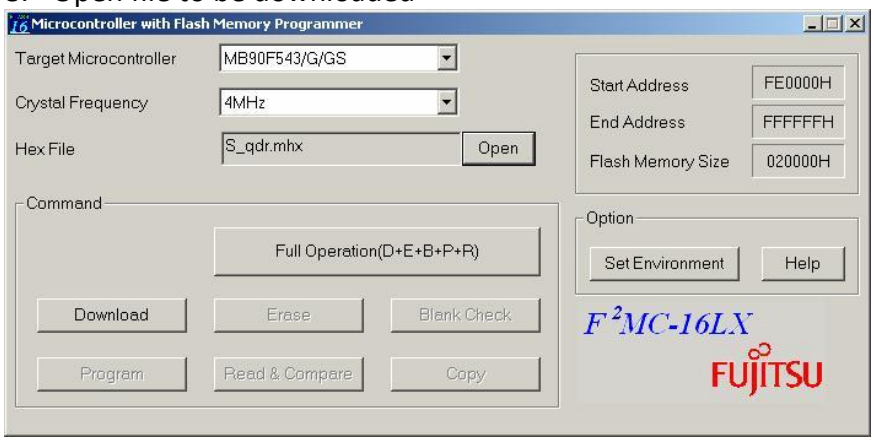
Select “Crystal Frequency” a 4MHz.

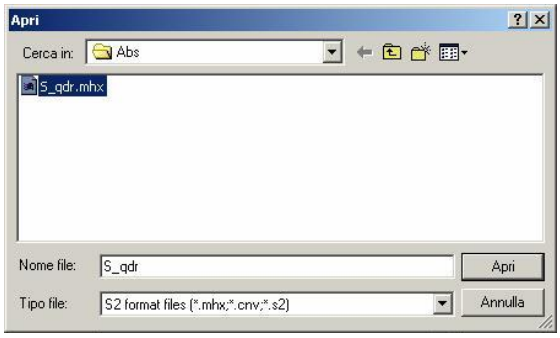
7. Select COM port according to interface cable installation.



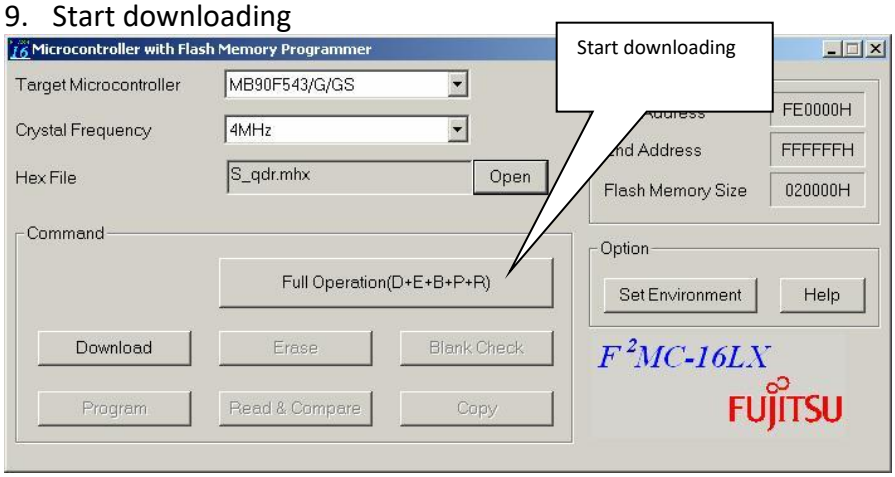
Select COM port

8. Open file to be downloaded

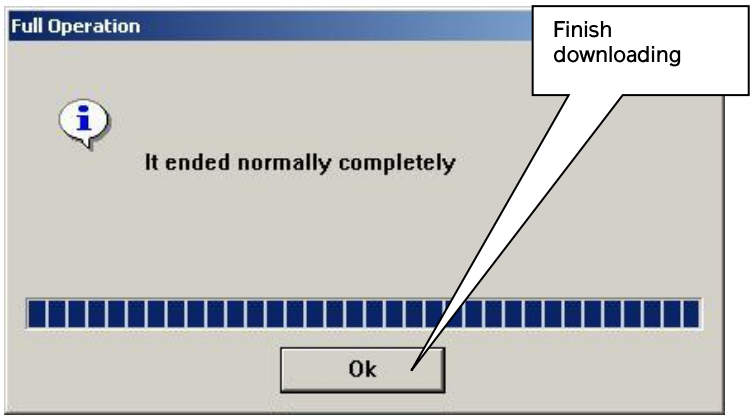




9. Start downloading



RX and TX led's blink.



10. While pressing the **RESET** button set the board dip switches SW1 as follows:
    - WD = ON
    - RS = ON (if present)
    - PRG = OFF

11. Set all default parameters (param. 98.02 = Yes)
12. Exit and save (param. 00.01 – Save changes - ok)
13. Enter programming again, check ALL parameters and set them according to installation.

SOFTWARE UPDATING by USB memory stick

1. Switch OFF the controller, insert the USB key on the SEC-3Q board
2. While holding pressed the RESET button switch ON the controller. Keep pressed 5 seconds more RESET button. At button release download begin, from USB stick to SEC-3Q board.
3. When finished the board go to normal mode automatically.
4. Enter programming mode, check ALL parameters and set them according to installation.

SAVING PARAMETERS on USB key

1. Set lift reference number to parameter 01.10 (e.g. 12345), save and exit programming mode
2. Switch OFF the controller. With no power in the controller insert the USB key
3. Switch ON the controller. A new file, named with the lift reference number will be generated into the USB key (e.g. sn012345.sec)

LOADING PARAMETERS from USB key

1. Switch OFF the controller. With no power in the controller insert the USB key containing the parameter file to be uploaded
2. Press button ▼ (S2) and while keeping it pressed switch ON the controller
3. Parameters will be copied from the USB key to the SEC-3Q board

V3F speed selection

	HIGH P3/1	**LOW** P3/2	**INSP** P3/3	**VACON NXP**	~~**VACON NXL**~~	**FUJI**
High 50Hz - 1500rpm	☼	●	●	P2.2.7	~~P2.2.5~~	C11
Intermediate High 40/50Hz - 1200/1500rpm	☼	●	☼	P2.2.11	~~P2.2.9~~	C10
Intermediate Low 30Hz - 900rpm	●	☼	☼	P2.2.12	~~P2.2.10~~	C08
Short floors 15Hz - 450rpm	☼	☼	●	P2.2.9	~~P2.2.7~~	C09
Reset 25Hz - 750rpm	☼	☼	☼	P2.2.13	~~P2.2.11~~	C05
Inspection – Recall 20Hz - 600rpm	●	●	☼	P2.2.10	~~P2.2.8~~	C06
Low **5**Hz - 150rpm	●	☼	●	P2.2.8	~~P2.2.6~~	C07
Zero 0Hz - 0rpm	●	●	●	P2.2.6	~~–~~	C04
VACON terminals	14	15	16			
FUJI terminals	X1	X2	X3			