

# LC 100

CAN bus  
microprocessor  
elevator system

user  
manual



making technology  
simple

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# 1. General

LC100 is a microprocessor control system for elevators up to 40 stops and 8 elevators in multiplex work. The system is universal and applicable to a wide variety of requirements that are set to control a new generation of all types of elevators up to 4m/s..

The system is modular with the basic concept that signals are processed on the spot and the output signals are generated where needed. Communication between modules is realized with very robust standardized industrial CAN bus to meet the latest achievements in technology of CAN communications.

System is mainly produced in SMT technology (surface mounting technology). The system is designed with components that meet the low power consumption. All boards have passed several tests: electrical test of printed boards before assembling, functional test after production and temperature and load test for each lot.

The system meets the following standards:

EN 81-1, EN 81-2, EN81-A3  
 EN 12015, EN 12016,  
 EN 55011, EN 61000-4-2, EN 61000-4-3,  
 EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11

Basic features:

- The universal program for all types of installation with the possibility of complete user settings with LCD mobile terminal, personal computer or through the internet.
- Applicability to all known types of drive elevators (adaptability to different systems of control plants), different types and kinds of doors, a passing cab.
- A short floor distances, relabeling, door preopening, several types of parking, more fire zones, loading and unloading of the building, driving priority.
- Different modes of call processing, with emphasis on energy saving and lighting and ventilation energy saving management.
- Module connection with connectors – plugs & plays system.
- Universal traveling cable for all kind of installation prewired for easy connecting.
- Different types of copying the position of the cab.
- Cabinet load measurement.
- Monitoring the temperature of the engine and control cabinets.
- Landing correction for each floor.
- Parameter selection for signalization.
- More than 100 parametric timers for various applications.
- Real time failure statistics.
- Small size plate which provide a control cabinet of width 120 mm.
- Safety circuit voltage from 24 DC to 230 AC.
- Adaptability to new installations and modernization.
- Monitoring system via Internet.

Modules of LC100 system:

LC100-C Main control board  
 LC100-K Cabin input-output board  
 LC100-S Safety circuit controlling board  
 LC100-Z Cabin connection board with emergency power supply 12VDC  
 LC100-I Shaft input-output board  
 LC100-B CAN bridge board  
 LC100-M3, M4, M5, M6, M8 Landing call unit with dot matrix floor indicator  
 LC100-M7 Landing call unit with seven segment floor indicator  
 LC100-G Monitoring connection board  
 LC100-R, T Relay board with 4 relays (R) and 8 relays (T)  
 LC100-E,J Input-output board  
 LC100-F Additional in-out board (16 I/O)  
 LC100-V Weight measurement board (available from 11/2011)



## 2. LC100 boards description

### 2.1 LC100-C main control unit

LC100-C is a central control system plate of a LC100 system. In addition to processing input and output information management and storage system parameters, plate has the function of communication between peripheral I / O plate system. Communication between different parts of the system is based on CAN communication. The system has two independent CAN channels. One is used for CAN communication with the boards on the level of simplex and the other for connection of the landing call boards for multiplex and the communication to the monitoring system.

Input Power for the system (XC13) is 24 VDC. Voltage tolerance is +10 / -20%. To operate the processor power is converted through a DC / DC converter to the 5V. Input voltage (24 VDC) is transmitted directly to the connectors XC1 to XC4, the power is connected across a diode to the XC12 connector for connecting a landing call boards in multiplex operation. All connectors are different colours and pitches.

Main functions:

- 2 independent CAN bus.
- 14 programmable optocoupler inputs with status LED indicators.
- 6 opt coupler inputs for connecting the LC100-S safety circuit board.
- 8 programmable digital outputs.
- Input for connection of an inductive sensor (NPN) that is used in certain types of copying the position of the cabin.
- Analog input for PTC probe resistance measurement with adjustable resistance tripping.
- Real-time clock with battery supply.
- Measurement of ambient temperature with adjustable temperature range operation.

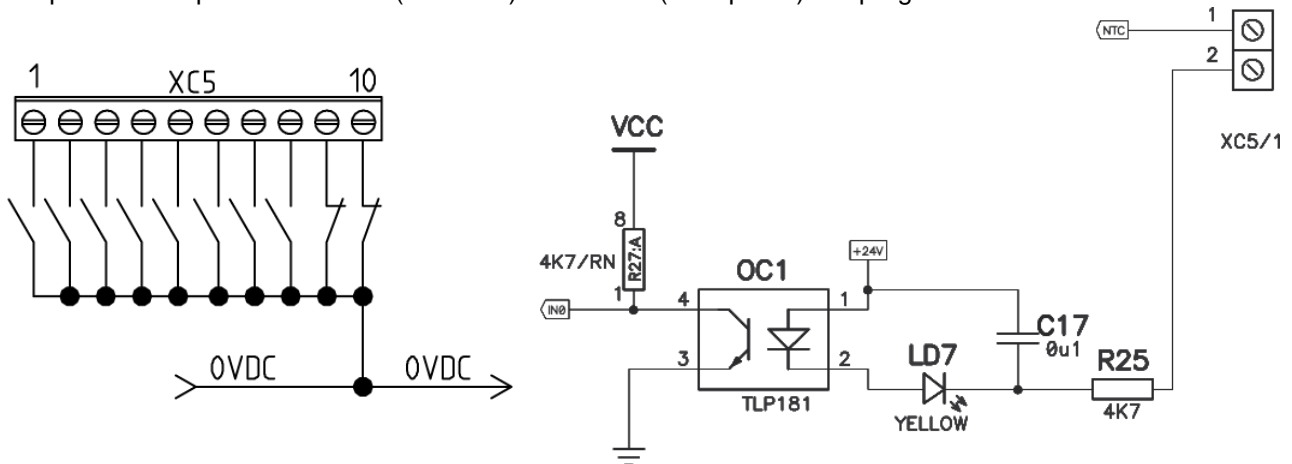
Pin: 2 on the input connector XC8 is used for connection of PTC sensor and has the ability to customize the level of tripping over the parameter **I-01** and **I-02**.

Pin XC7: 1 on the connector is for connecting an inductive sensor type NPN to copy elevator position.

All digital inputs are optocoupler with LED status indication of input.

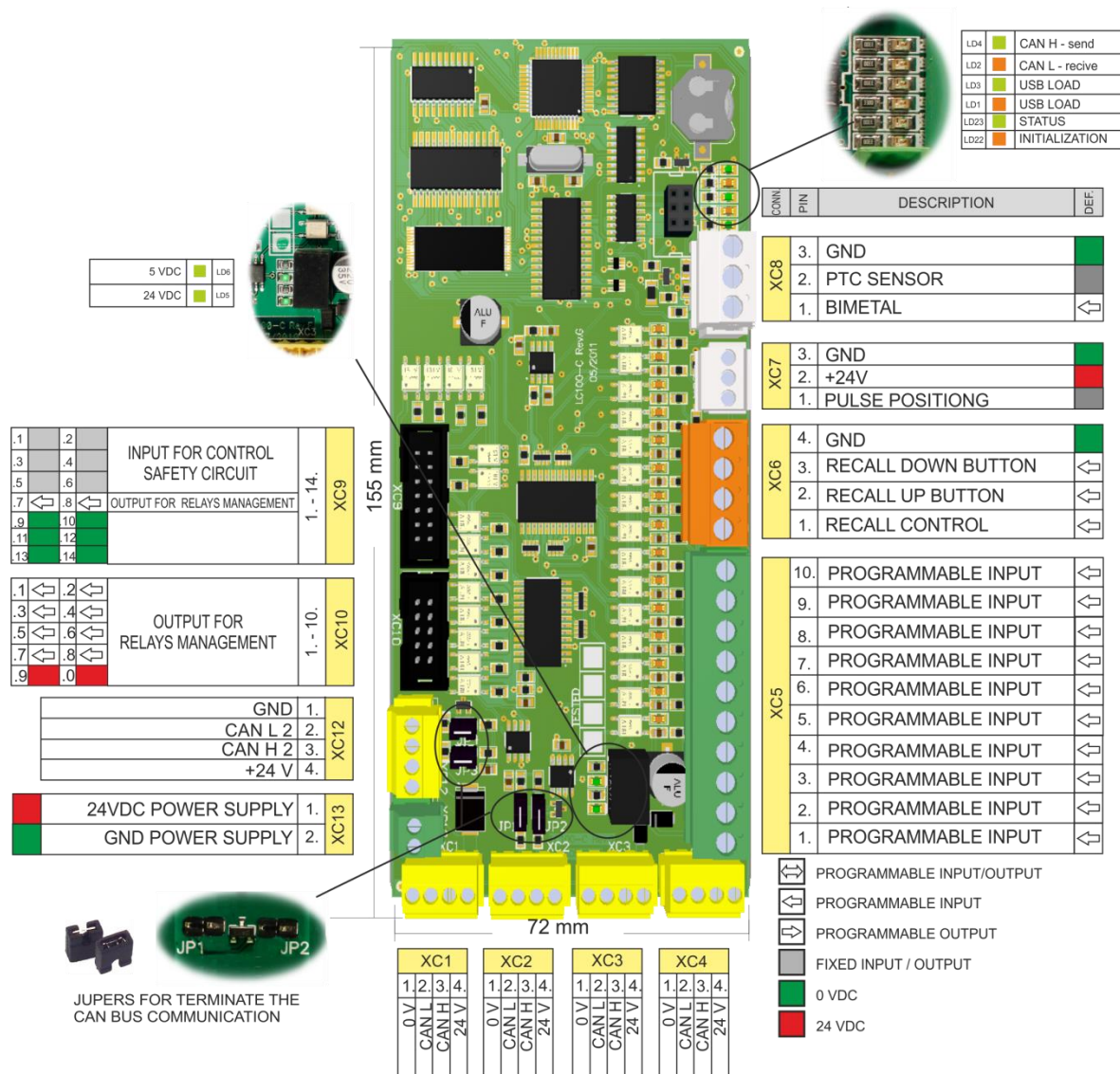
Board is equipped with CR1220-C1 3V battery for storing parameters and statistics.

All inputs and outputs than XC7.1 (inductive) and XC8.2 (PTC probe) are programmable



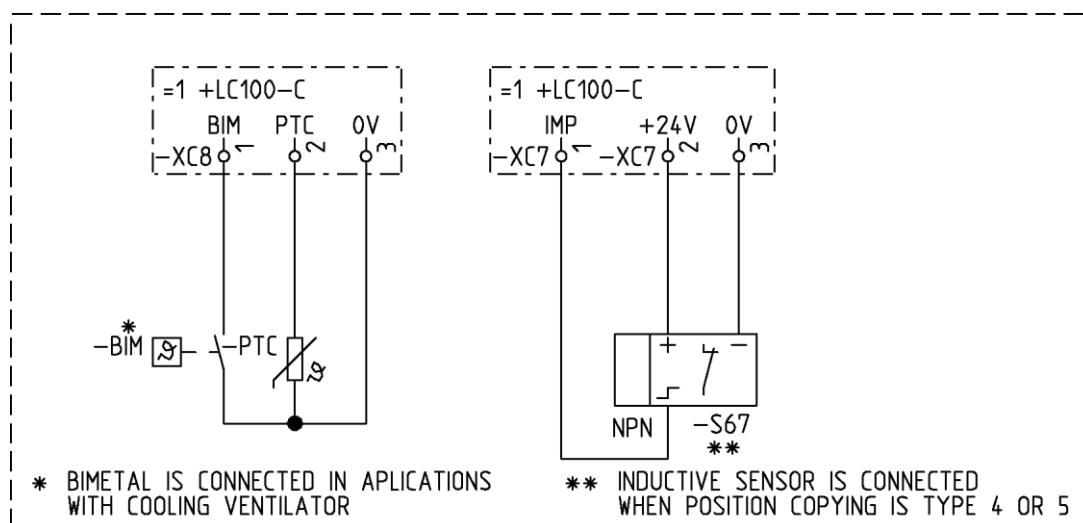
Picture 1 - Example of connecting the inputs.

The example in Figure 1 shows a way of connecting the inputs on the LC100-C plate, the polarity configuration inputs (NO or NC) is available on all inputs through the configuration parameters **TYPE-N**.

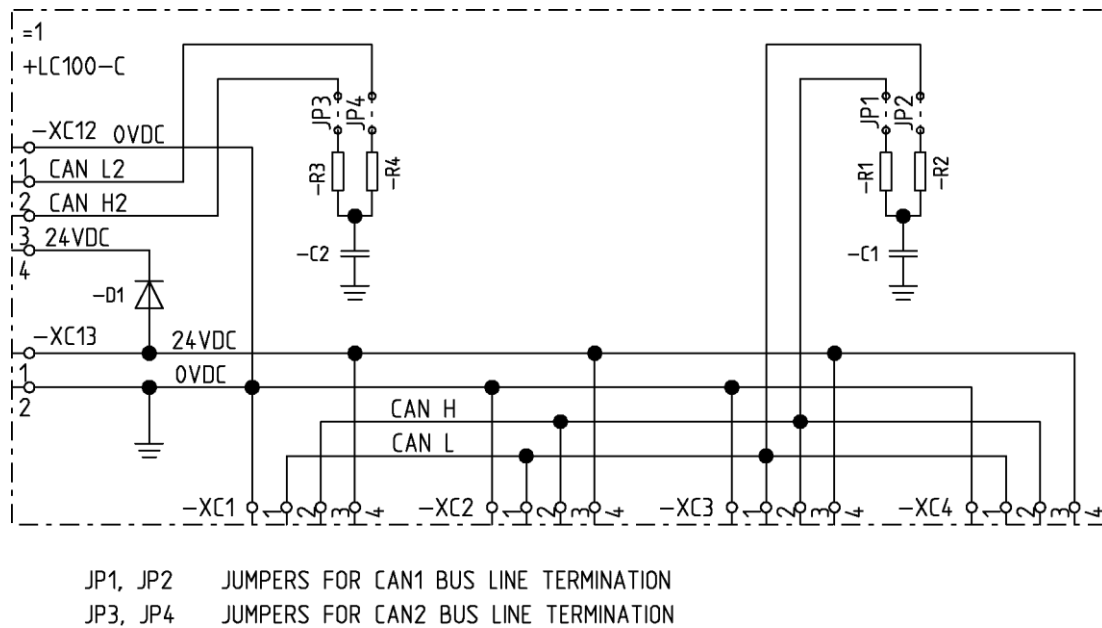


Picture 2 - LC100-C board

Connection diagram for bimetal, ptc probe and inductive switch on overspeed governor:



Power supply for LC100-C board:



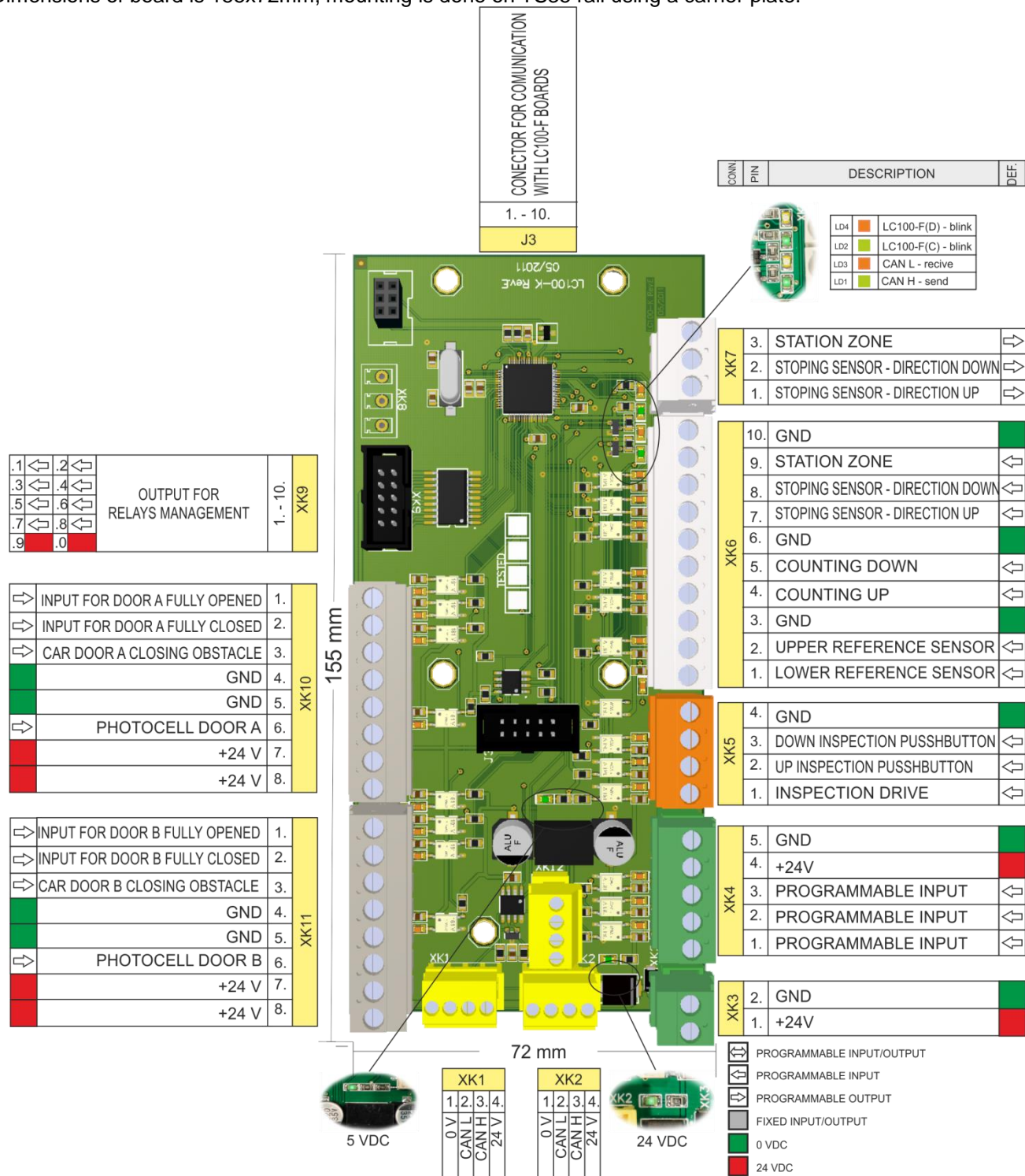
## 2.2 LC100-K cabin I/O board

LC100-K board is used as an input/output unit for elevator cabin.

Supply is 24VDC and is powered via CAN / power connector XK1, XK2.

All inputs and outputs on the LC100-K board are programmable. You can change the polarity of the inputs (NO or NC) and output (NOR or INV).

Dimensions of board is 155x72mm, mounting is done on TS35 rail using a carrier plate.



Picture 3 - LC100-K board

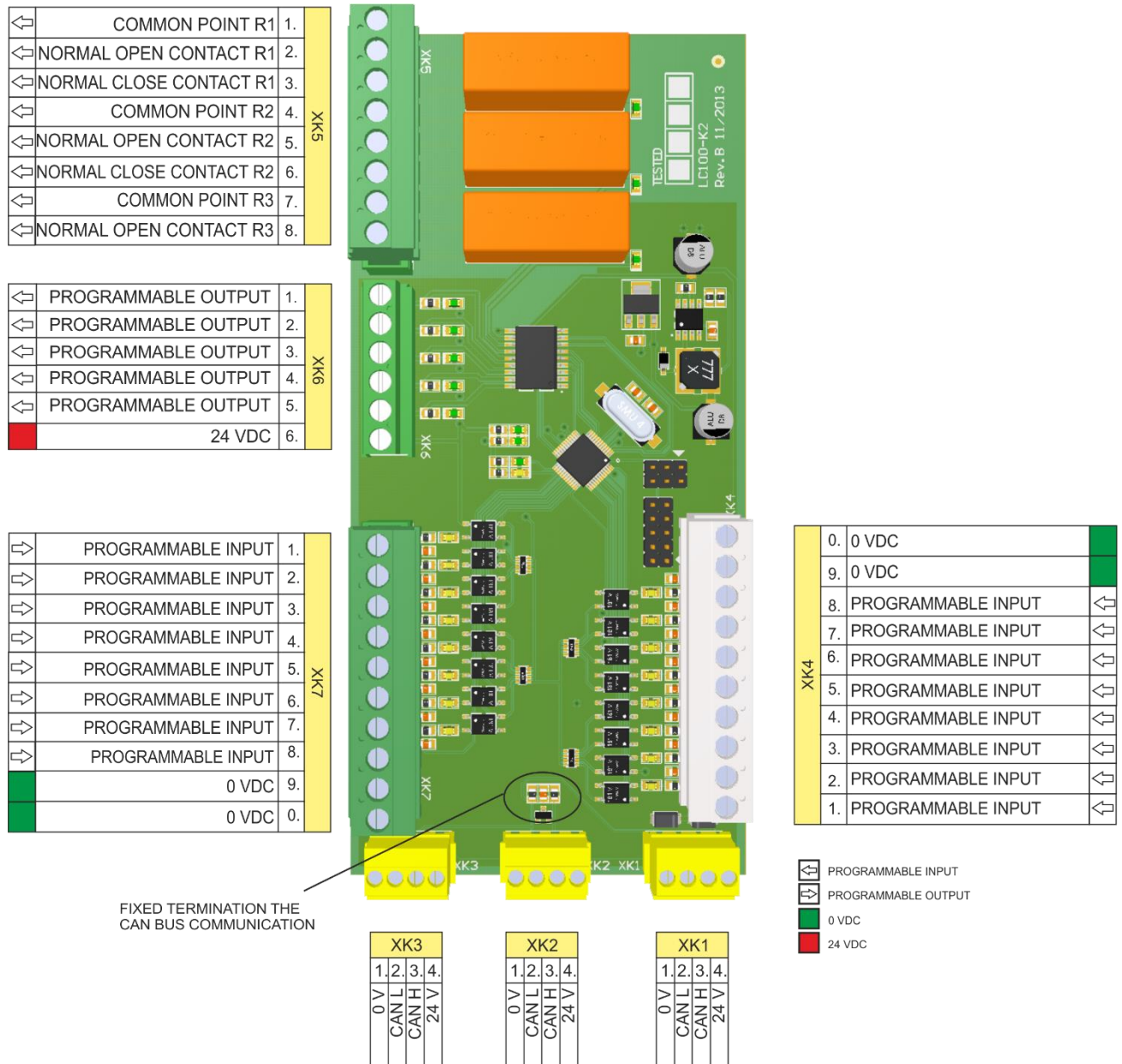
## 2.3 LC100-K2 cabin I/O board

LC100-K2 board is used as an input/output unit for elevator cabin.

Supply is 24VDC and is powered via CAN / power connector XK1, XK2, XK3

All inputs and outputs on the LC100-K2 board are programmable. You can change the polarity of the inputs (NO or NC) and output (NOR or INV).

Dimensions of board is 155x72mm, mounting is done on TS35 rail using a carrier plate.



Picture 4 - LC100-K2 board



## 2.4 LC100-S safety circuit board

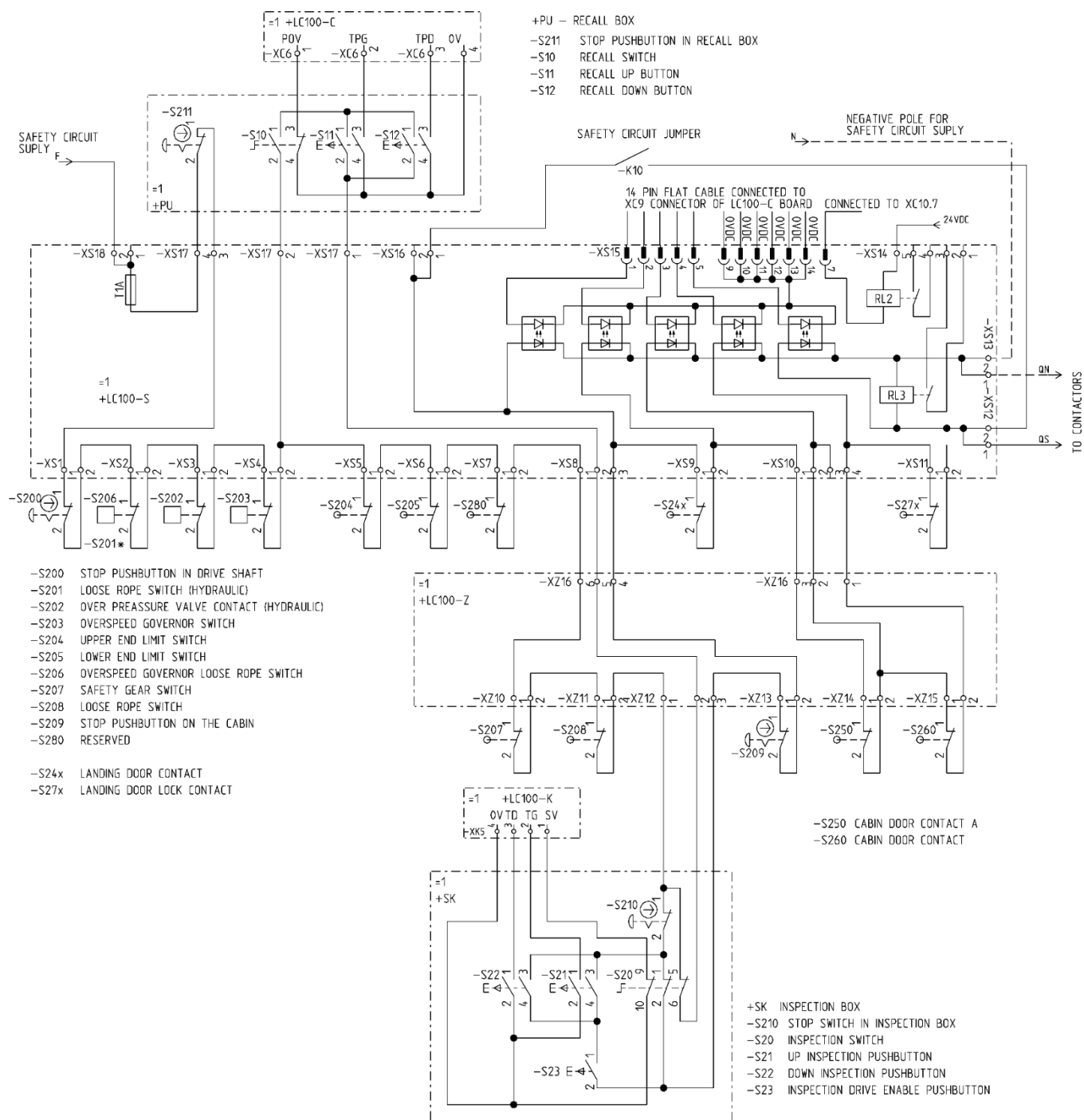
LC100-S safety board is used to connect elements of a safety circuit. Information about points of safety circuit is transferred to lower voltage through optocoupler and then transferred through XS15 flat connector to main LC100-C board.

Elements of a safety circuit are connected to connectors XS1 to XS16 which are red coloured. On the board there is a safety fuse and status LED diodes.

There is two versions of LC100-S board according to the safety circuit voltage:

1. 220VAC and 48VAC (with capacitors)
2. 48VDC (short circuited capacitors).

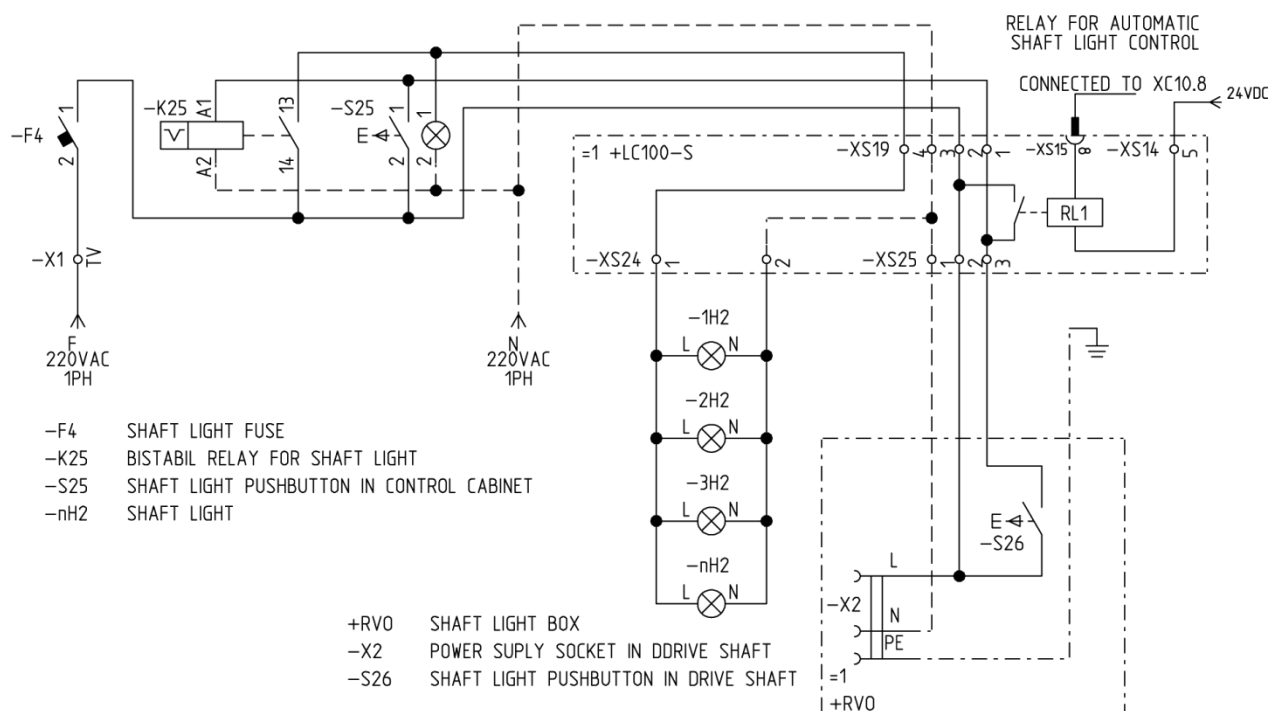
### Connection diagram for safety circuit:



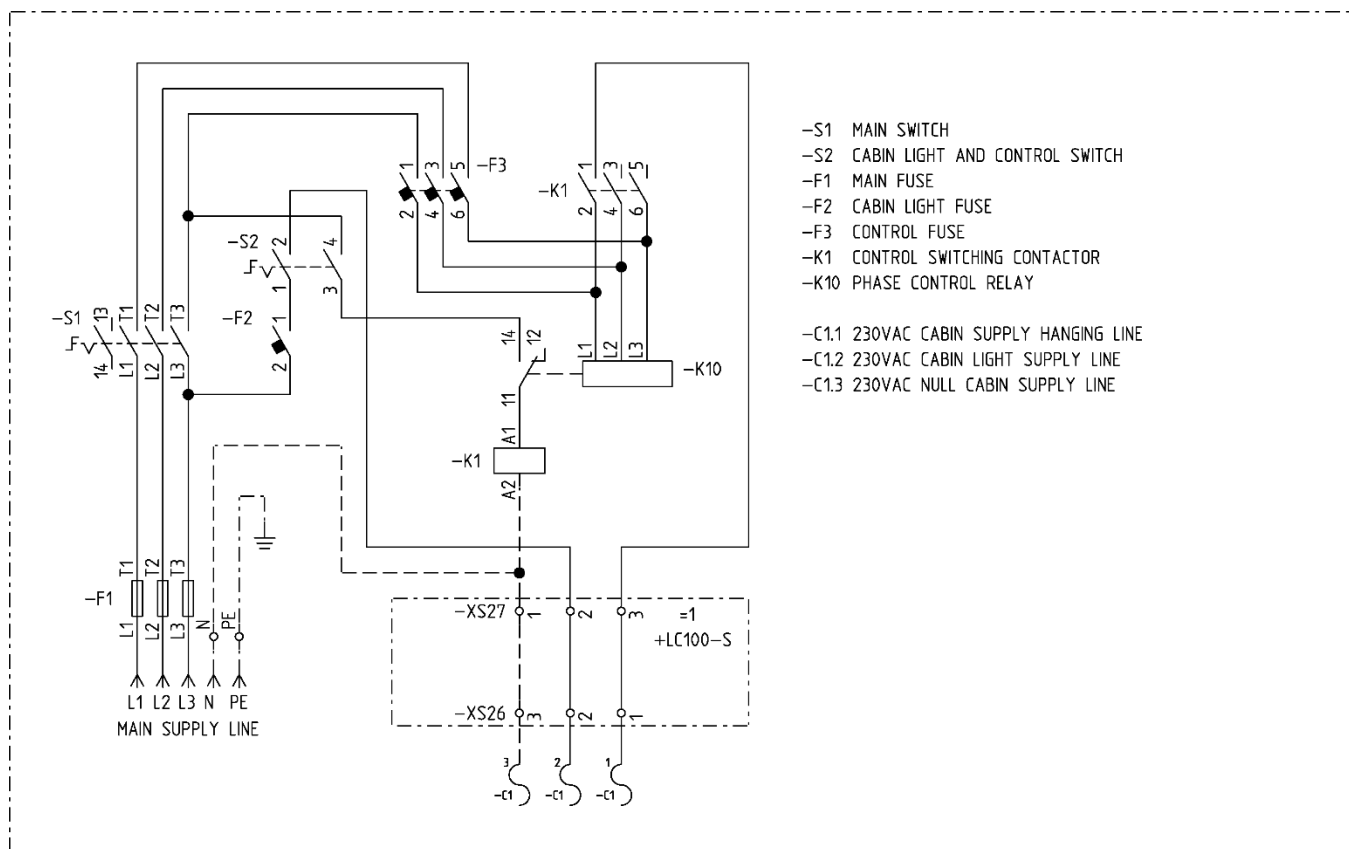
On LC100-S board there are also connectors for connecting the drive shaft light with LED indicator and controlling the status for automatic control of the light (the light is powered automatically when the inspection mode is on). Shaft lighting is controlled by relay RL1 with output parameter XC10.8.

- XS19 – input connector for shaft light power supply.
- XS25 – connector for shaft light box in the drive shaft pit.
- XS24 – connector for shaft light.

Shaft light connection diagram:



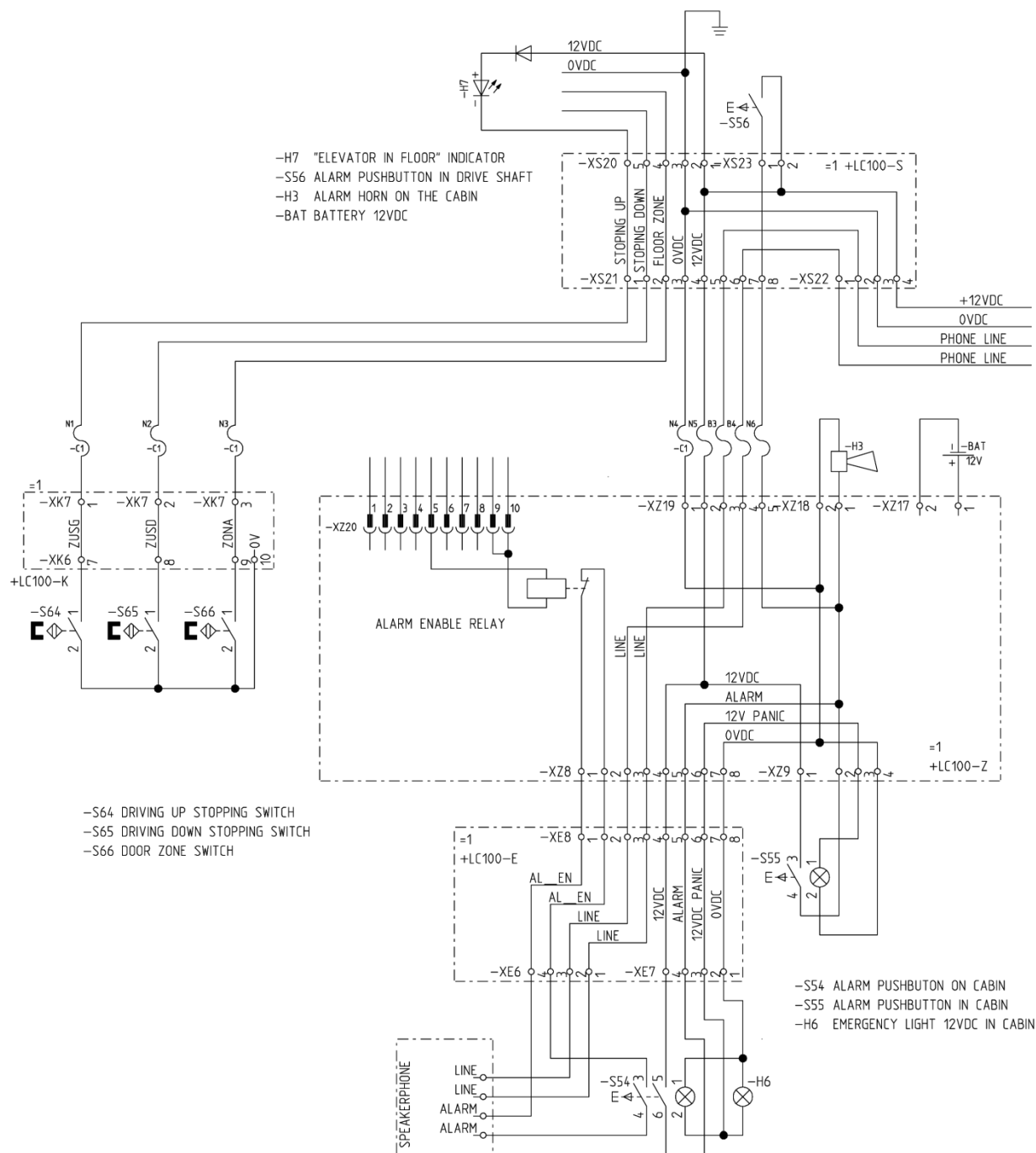
Cabin power supply connection diagram:

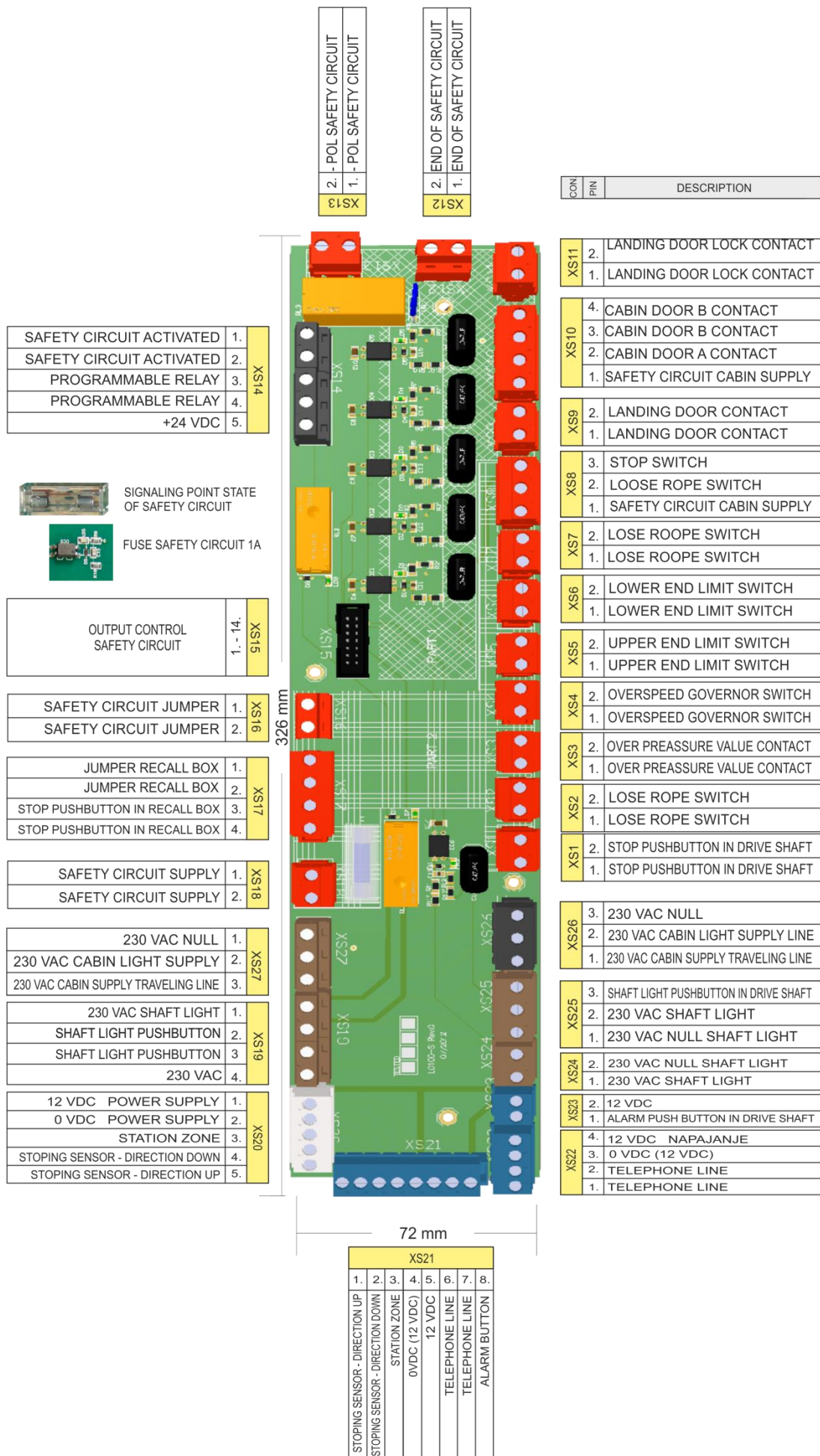


Connectors XS20 to XS23 are used to connect to a voice device in the cabin, emergency power supply, alarm buttons, and indicator "elevator in the station"

- XS20 output connector is used for connecting "elevator in the station" indicator, and connecting safety module for applications with leveling or preopening the doors..
- XS21 input connector for signals from the cabin (travelling cable)
- XS22 connector for speaker phone in machine room.
- XS23 connector for alarm pushbutton in drive shaft.

Alarm and speaker phone connection diagram:





Picture 5 - LC100-S bord



## 2.5 LC100-SR safety circuit board

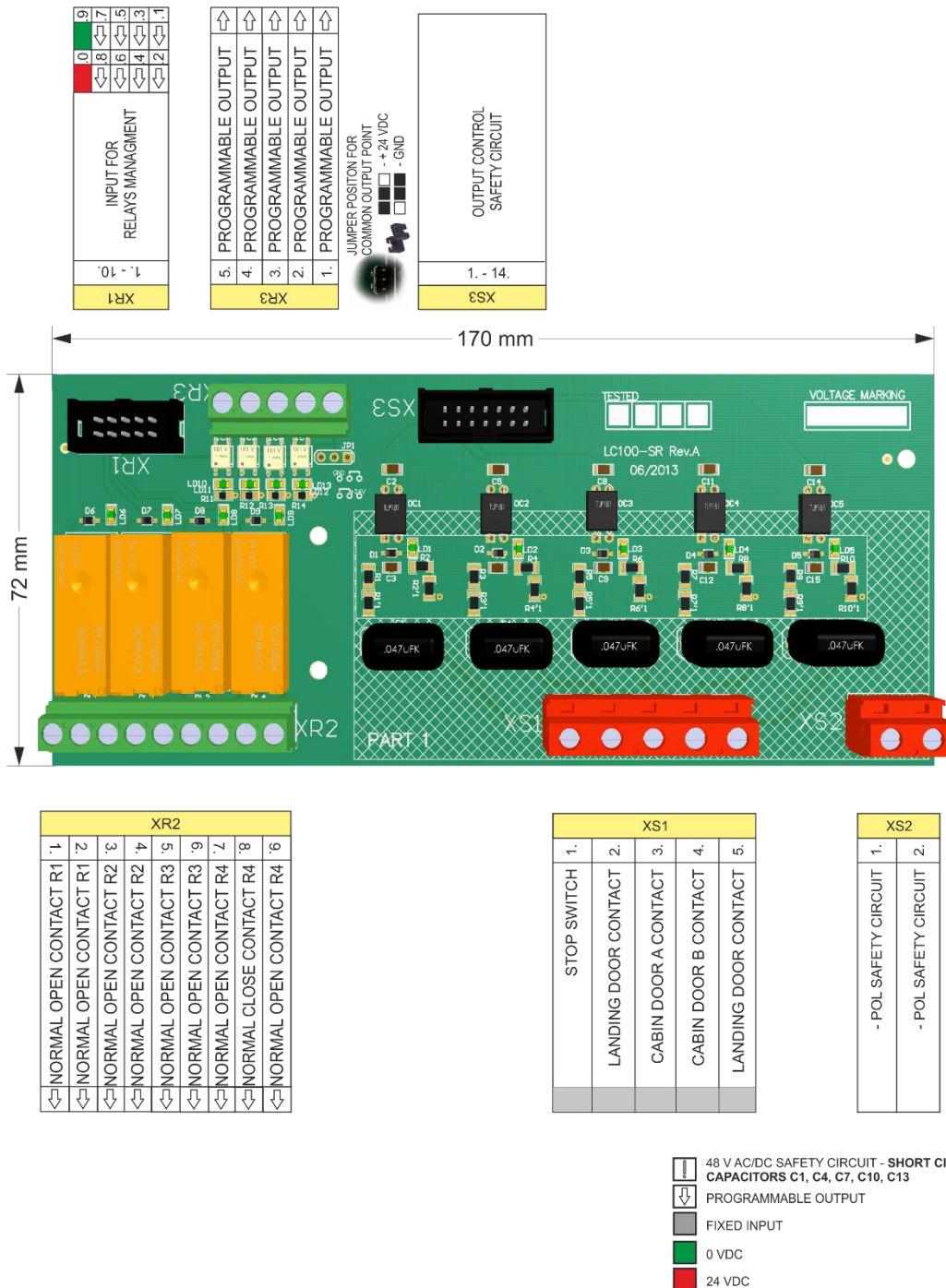
LC100-SR safety board is used to connect elements of a safety circuit. Information about points of safety circuit is transferred to lower voltage through optocoupler and then transferred through XS3 flat connector to main LC100-C board.

Elements of a safety circuit are connected to connectors XS1 to XS2 which are red coloured. On the board there is a safety fuse and status LED diodes.

There is two versions of LC100-SR board according to the safety circuit voltage:

3. 220VAC and 48VAC (with capacitors)
4. 48VDC (short circuited capacitors).

Connection diagram for safety circuit:



## 2.6 LC100-E input-output unit for cabin calls

LC100-E board of the system is used as input / output unit. The main purpose of the board is for cabin call processing. It consists of CAN communication connector XE1 and XE2, and connectors with I / O pins and XE3 XE4. XE5 connector for connecting additional input-output board LC100-F.

The system can have two LC100-E boards addresses "0" and address "1".

**Addressing** LC100-E board is performed by inserting a jumper JP3.

- No jumper JP3 board address "0" - LC100-E0
- With jumper JP3 board address "1" - LC100-E1

All I / O pins are programmable and are equipped with LED indication to monitor the status of inputs / outputs.

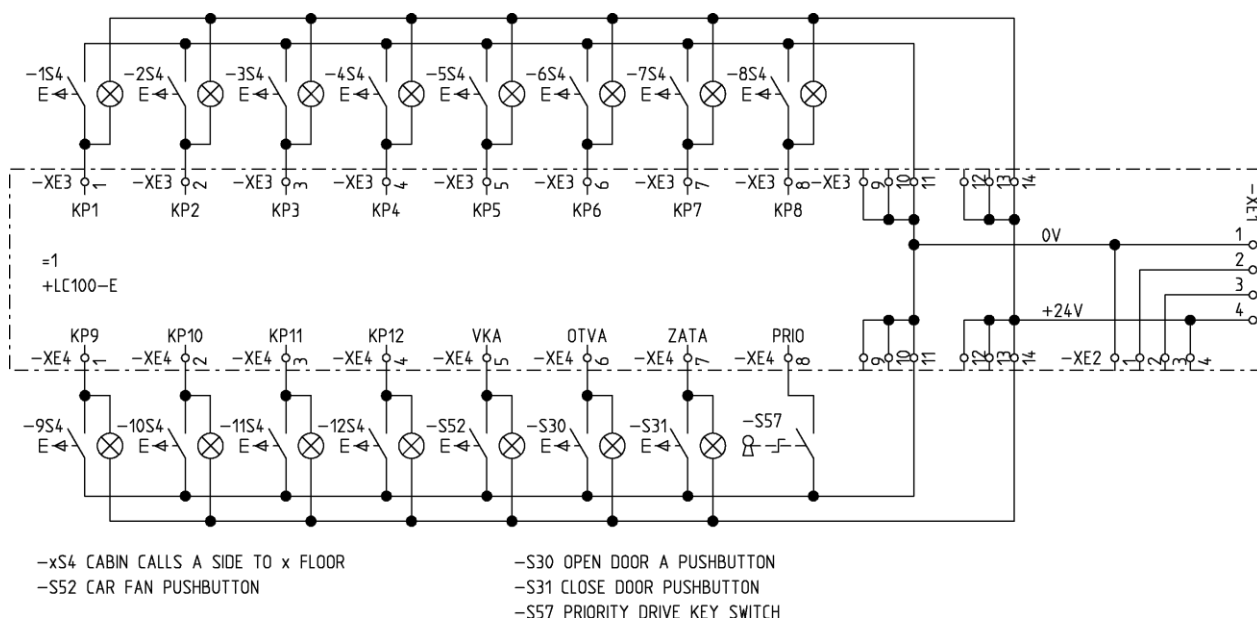
XE4.7 XE4.8 pins and are used for managing matrix indicator if the pins do not have function.

Jumpers JP1 and JP2 are used to terminate the CAN bus communication.

Input supply is 24VDC and it is powered through the CAN-power connector.

Dimensions is 42x200mm board, installation is done installing the spacers.

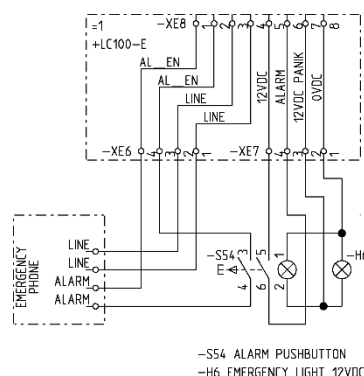
Cabin commands wiring diagram:

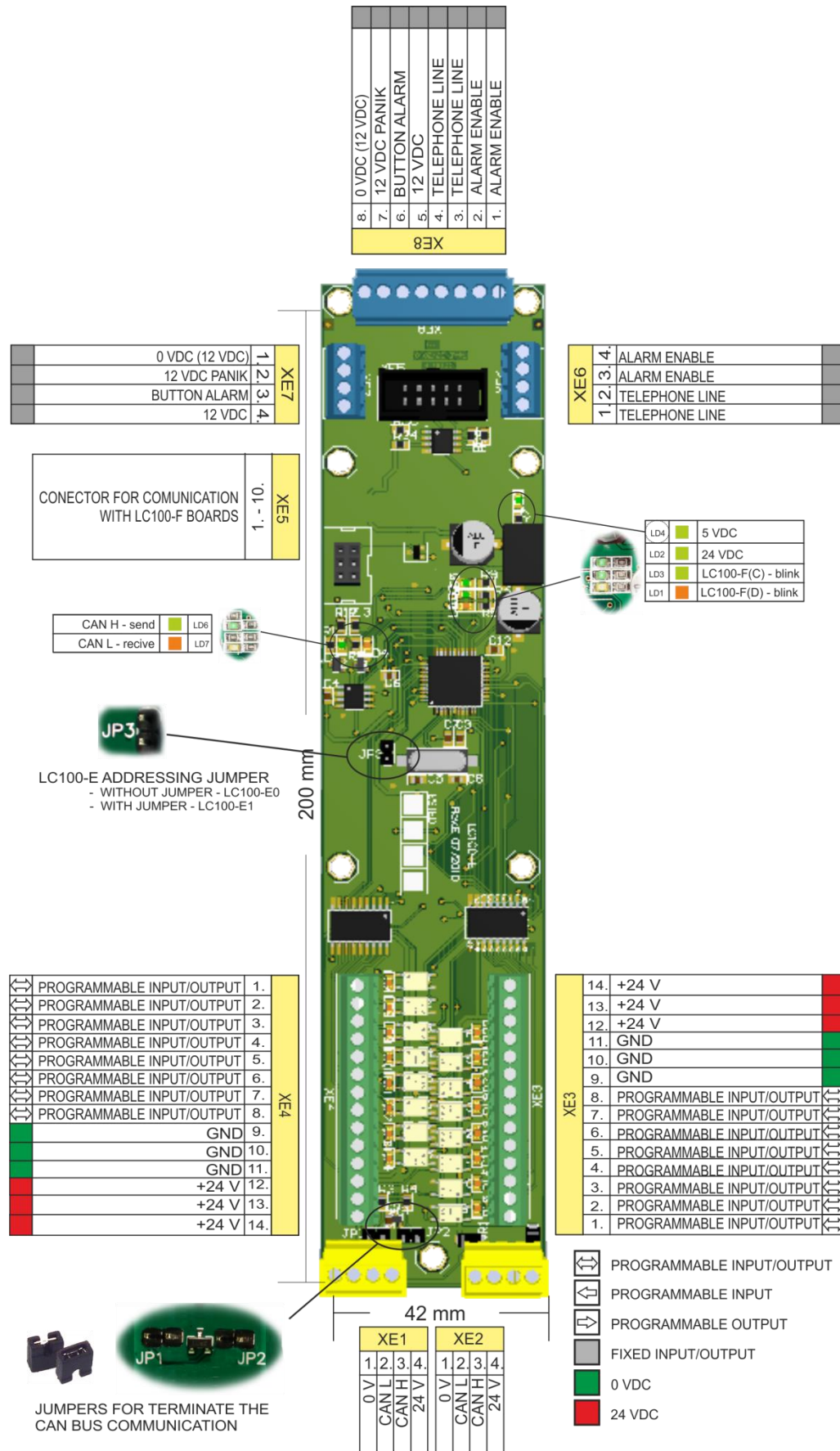


LC100-E board also contains connectors for connecting alarm push button, emergency phone and emergency power supply in the cabin.

- XE6 connector for connecting a voice device
- XE7 connector for connecting alarm pushbutton.
- XE8 connector for connecting LC100-E with LC100-Z board.

Connection diagram for alarm pushbutton





Picture 4 - LC100-E board

## 2.7 LC100-E2 in/out board

LC100-E2 board of the system is used as input / output unit. The main purpose of the board is for cabin call processing. It consists of CAN communication connector XE1 and XE2, and connectors with I / O pins and XE3 XE4.

The system can have 8 LC100-E2 boards addresses LC100-E0, E1, E0(FC), E0(FD), E1(FC), E1(FD), LC100-K(FC), K(FD)..

**Addressing** LC100-E2 board is performed by software addressing menu

All I / O pins are programmable and are equipped with LED indication to monitor the status of inputs / outputs.

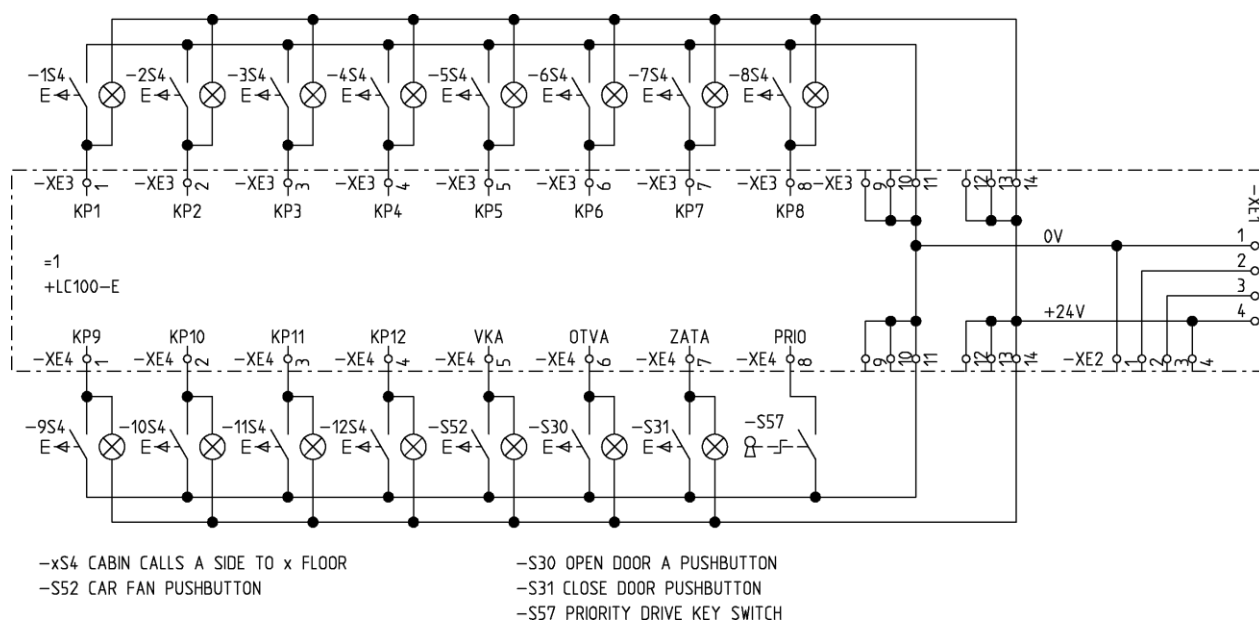
XE4.7 XE4.8 pins and are used for managing matrix indicator if the pins do not have function.

Jumpers JP1 and JP2 are used to terminate the CAN bus communication.

Input supply is 24VDC and it is powered through the CAN-power connector.

Dimensions is 172x42mm board, installation is done installing the spacers.

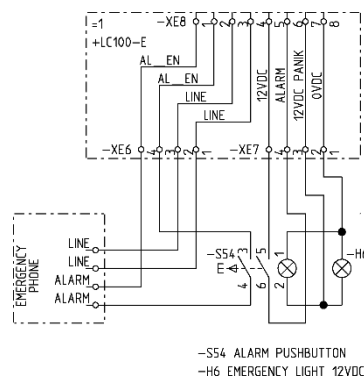
Cabin commands wiring diagram:

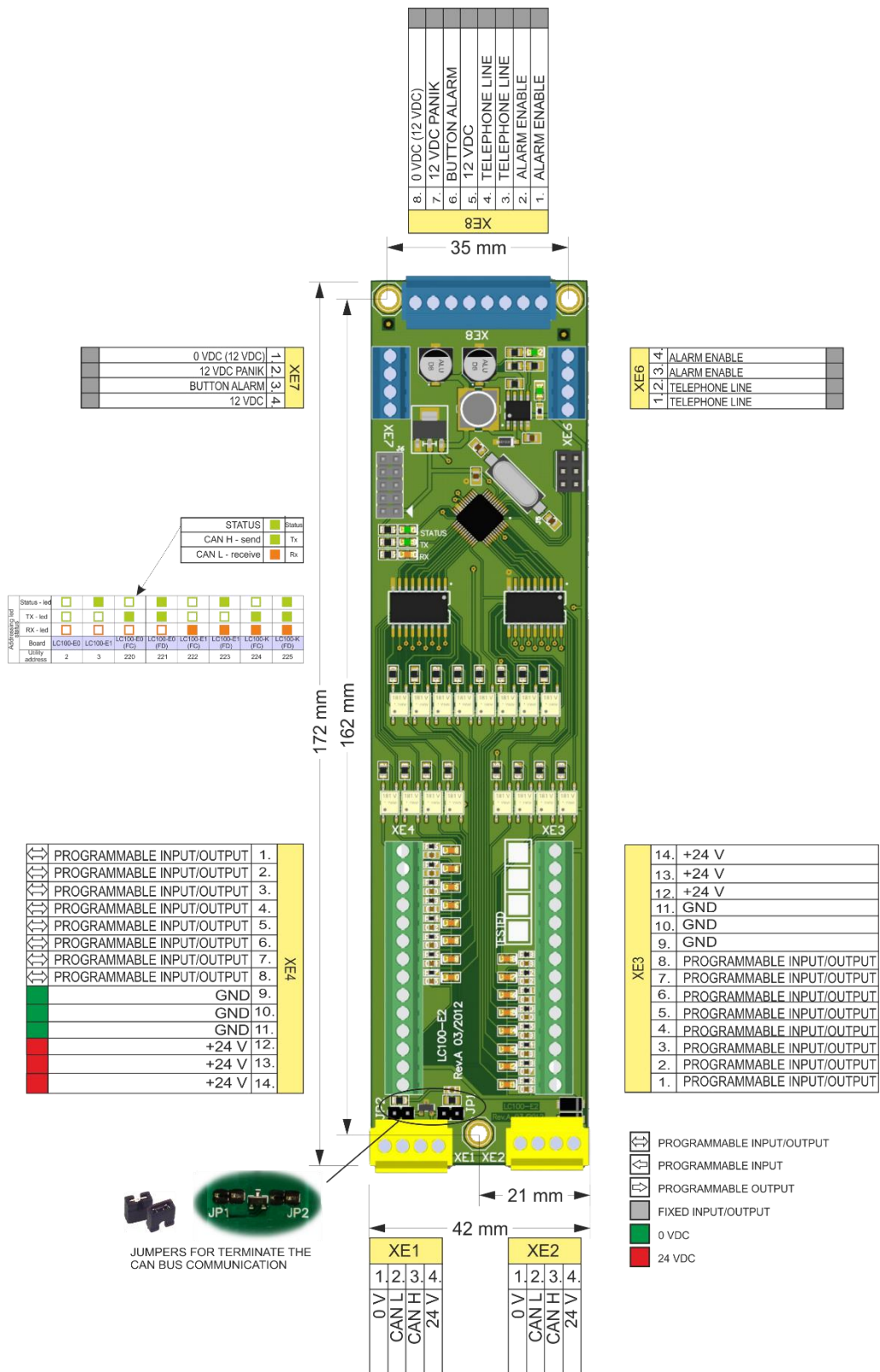


LC100-E2 board also contains connectors for connecting alarm push button, emergency phone and emergency power supply in the cabin.

- XE6 connector for connecting a voice device
- XE7 connector for connecting alarm pushbutton.
- XE8 connector for connecting LC100-E2 with LC100-Z board.

Connection diagram for alarm pushbutton





Picture 6- LC100-E2 board



## 2.8 LC100-E3 cabin I/O board

LC100-E3 board of the system is used as input / output unit. The main purpose of the board is for landing and cabin call processing. It consists of CAN communication connector XE3 and XE4, and connector with I / O pins and XE5 with parallel connection to XE6 and XE7 connector for management relays.

The system can have 8 LC100-E3 boards addresses LC100-E0, E1, E0(FC), E0(FD), E1(FC), E1(FD), LC100-K(FC), K(FD)..

**Addressing** LC100-E3 board is performed by software addressing menu

All I / O pins are programmable and are equipped with LED indication to monitor the status of inputs / outputs.

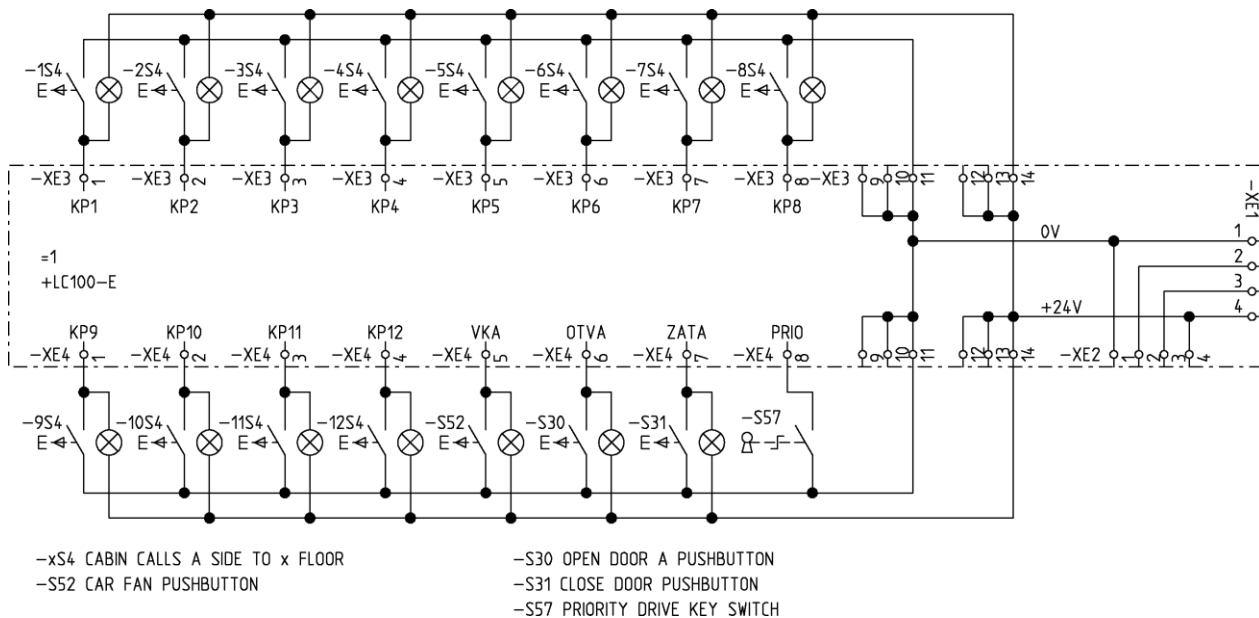
XE4.7 XE4.8 pins and are used for managing matrix indicator if the pins do not have function.

Jumpers JP1 and JP2 are used to terminate the CAN bus communication.

Input supply is 24VDC and it is powered through the CAN-power connector.

Dimensions is 172x42mm board, installation is done installing the spacers.

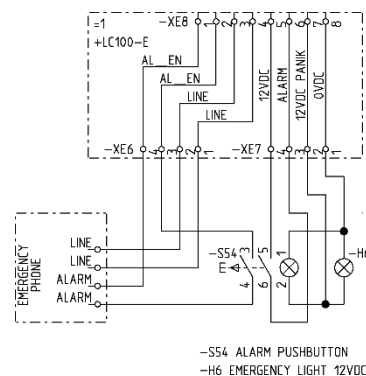
Cabin commands wiring diagram:

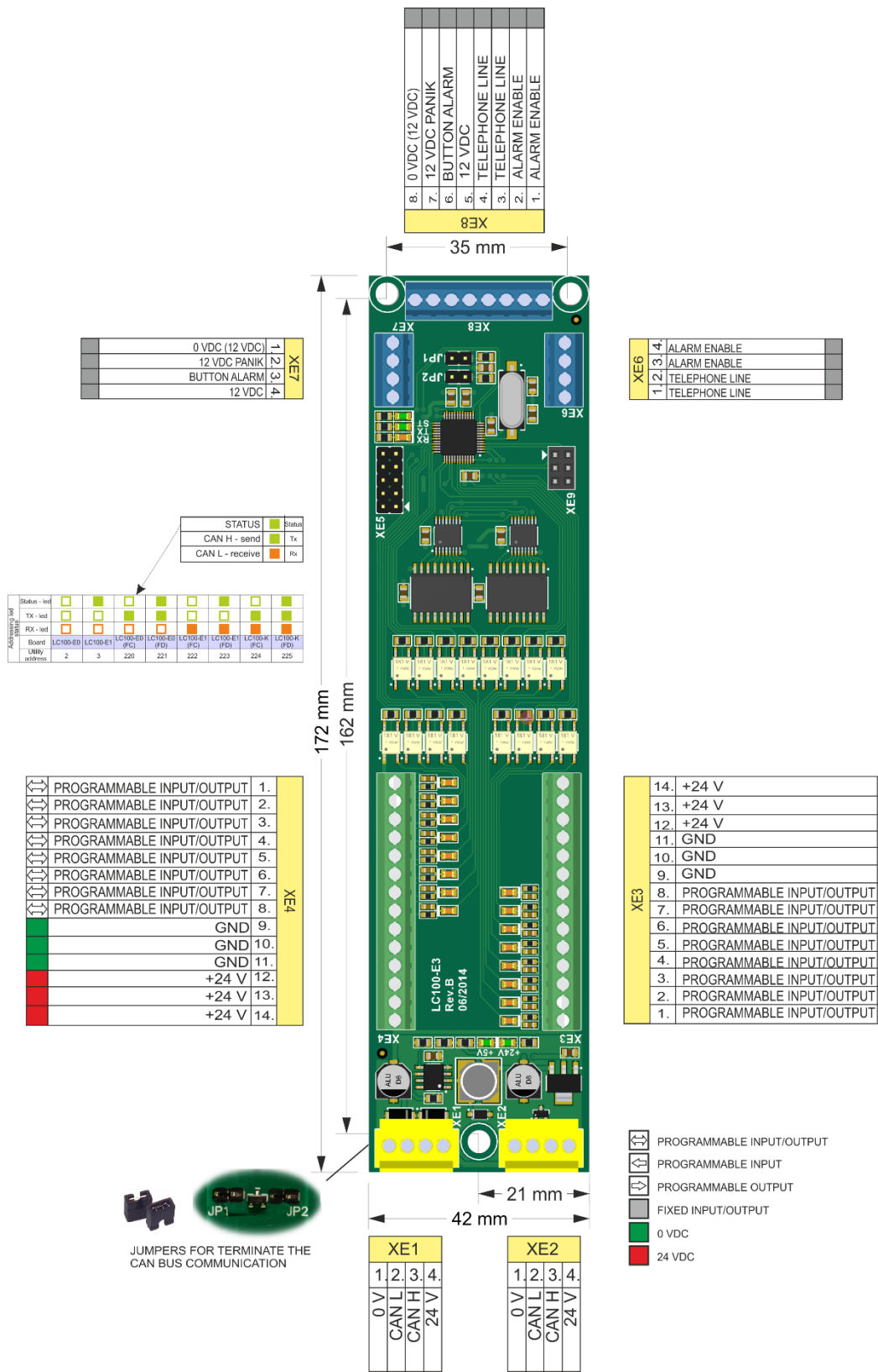


LC100-E3 board also contains connectors for connecting alarm push button, emergency phone and emergency power supply in the cabin.

- XE6 connector for connecting a voice device
- XE7 connector for connecting alarm pushbutton.
- XE8 connector for connecting LC100-E3 with LC100-Z board.

Connection diagram for alarm pushbutton





Picture 7- LC100-E3 board

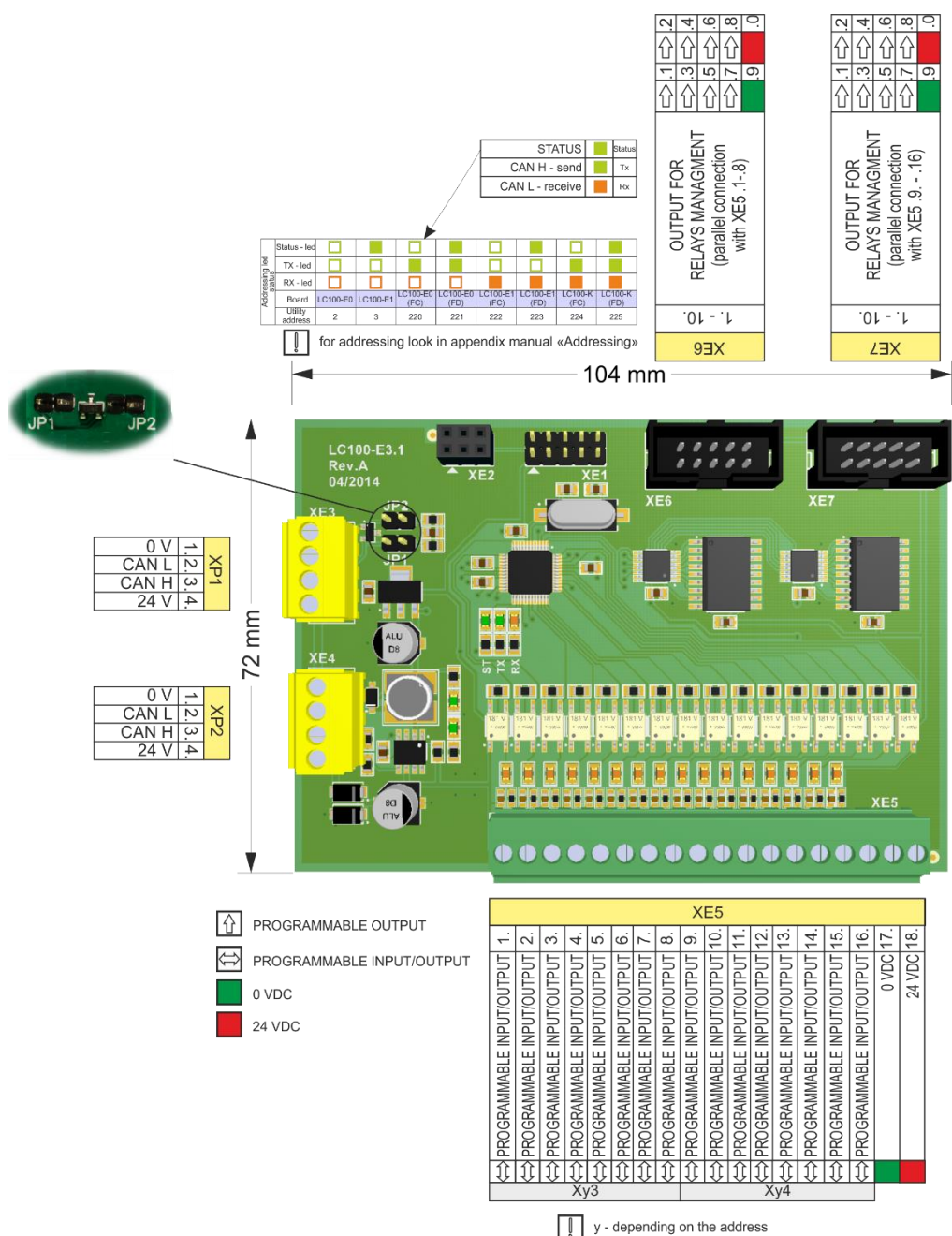
2.9 LC100-E3.1 cabin I/O board

LC100-E3.1 board of the system is used as input / output unit. The main purpose of the board is for landing and cabin call processing. It consists of CAN communication connector XE3 and XE4, and connector with I / O pins and XE5 with parallel connection to XE6 and XE7 connector for management relays.

The system can have 8 LC100-E3.1 boards addresses LC100-E0, E1, E0(FC), E0(FD), E1(FC), E1(FD), LC100-K(FC),K(FD)..

**Addressing** LC100-E3.1 board is performed by software addressing menu  
All I / O pins are programmable and are equipped with LED indication to monitor the status of inputs / outputs.  
XE4.7 XE4.8 pins and are used for managing matrix indicator if the pins do not havefunction.  
Jumpers JP1 and JP2 are used to terminate the CAN bus communication.  
Input supply is 24VDC and it is powered through the CAN-power conector.

Dimensions of board is 104x72mm, mounting is done on TS35 rail using a carrier plate.



Picture 8- LC100-E3.1 bord

## 2.10 LC100-E4 cabin I/O board

LC100-E4 board of the system is used as input / output unit. The main purpose of the board is for landing and cabin call processing and for inputs/outputs. It consists of CAN communication connector XE1 and XE2, and connector XE3 and XE4 with I / O pins and XE6 output connector and XE5 input connector.

The system can have 4 LC100-E4 boards addresses LC100-E0, E1, E2, E3

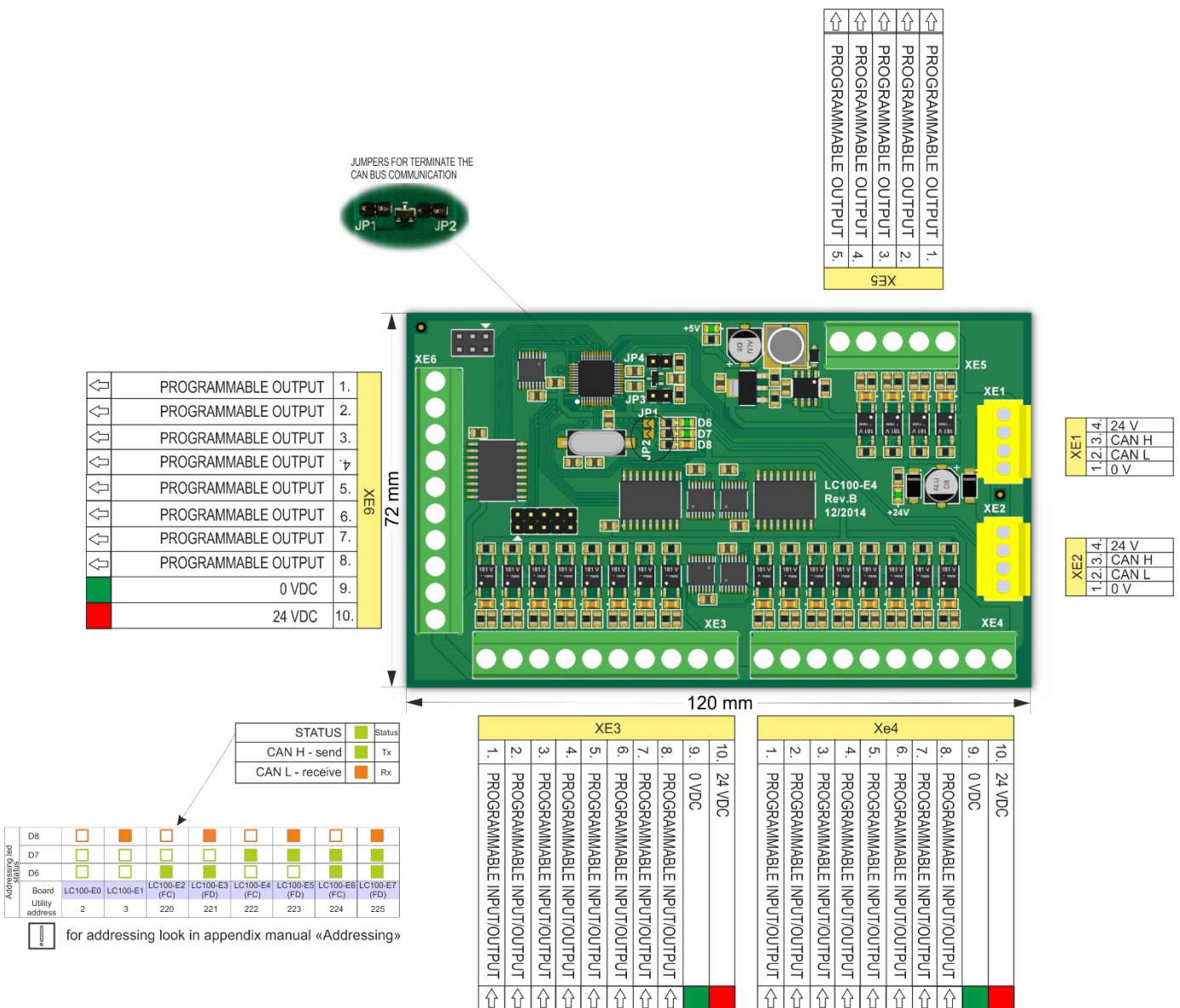
**Addressing** LC100-E4 board is performed by software addressing menu

All I / O pins are programmable and are equipped with LED indication to monitor the status of inputs / outputs. XE4.7 XE4.8 pins and are used for managing matrix indicator if the pins do not have function.

Jumpers JP3 and JP4 are used to terminate the CAN bus communication.

Input supply is 24VDC and it is powered through the CAN-power connector.

Dimensions of board is 120x72mm, mounting is done on TS35 rail using a carrier plate.



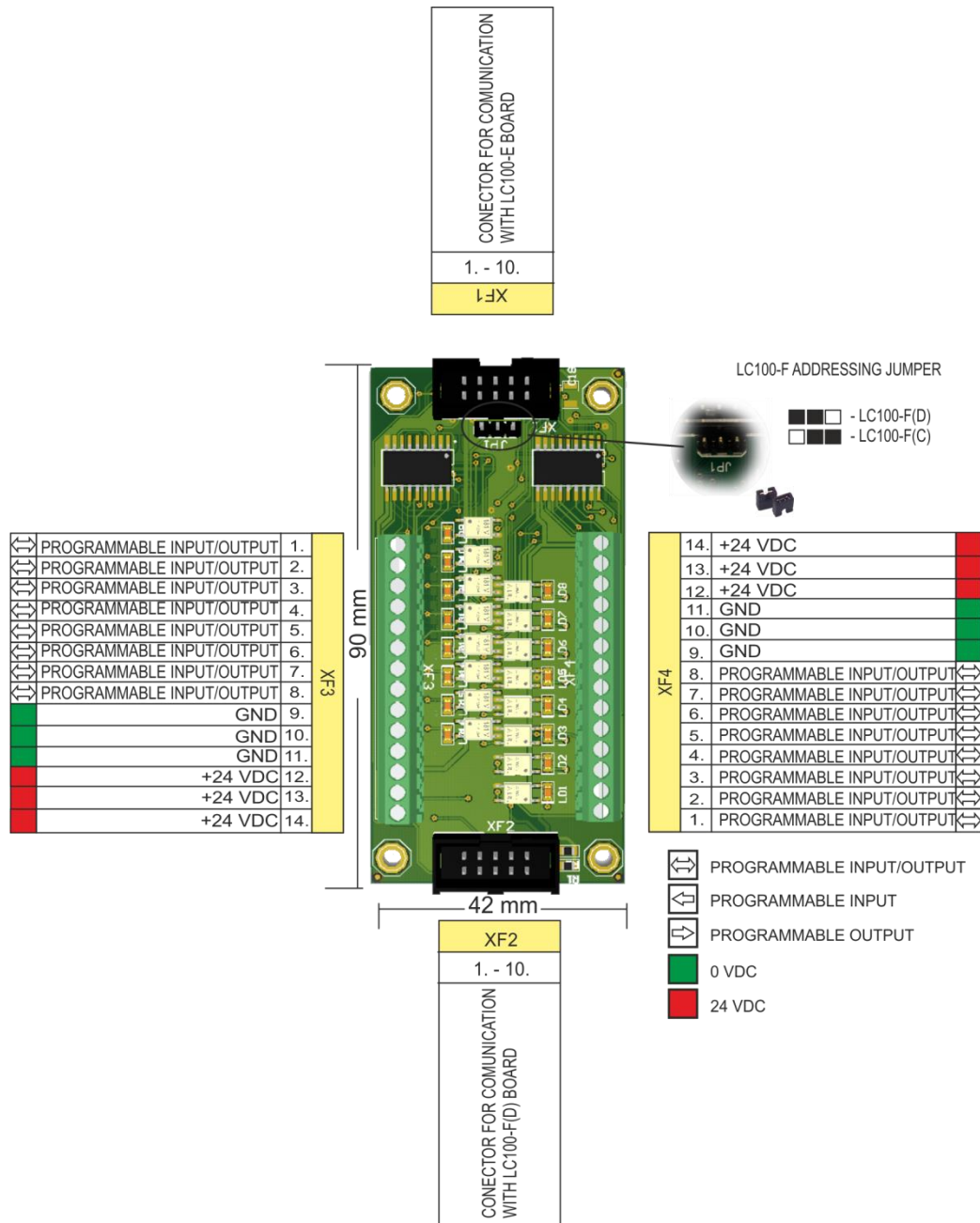
Picture 9- LC100-E3.1 bord

## 2.11 LC100-F in/out board

LC100-F board is input-output board with 16 input / output pins for the upgrade. The system can connect up to 6 LC100-F board.

To LC100-K board is possible to connect two LC100-F boards with address „C“ and „D“, to LC100-E0 board is possible to connect two board with address „C“ and „D“, and to LC100-E1 board is possible to connect two boards with address „C“ i „D“.

**Adressing** the LC100-F boards is done with jumpers like it is explained on picture 6.



Picture 10 - LC100-F board

Connecting the LC100-F board is done with 10 pin flat cable to connectors XF1 or XF2 (connectors XF1 and XF2 are connected pin to pin). Connecting to LC100-E is done through XE5 connector, and connecting to LC100-K board through connector XK12.



## 2.12 LC100-D control terminal

LC100-D control terminal consists of a 2x16 blue LCD screen to display and push-button ENTER, ESC, left, right, up and down navigation and push-button to reset the system.

Reset button is used for resetting some errors that can't be reset by recycling the power. By pressing the reset button for 5s processor is reseted like switching the power of and on.

Connecting the LC100-D terminal is performed by CAN connector. The terminal can be connected anywhere on the CAN bus system.

Dimensions: 145x90x25mm



Picture 11 - LC100-D control terminal

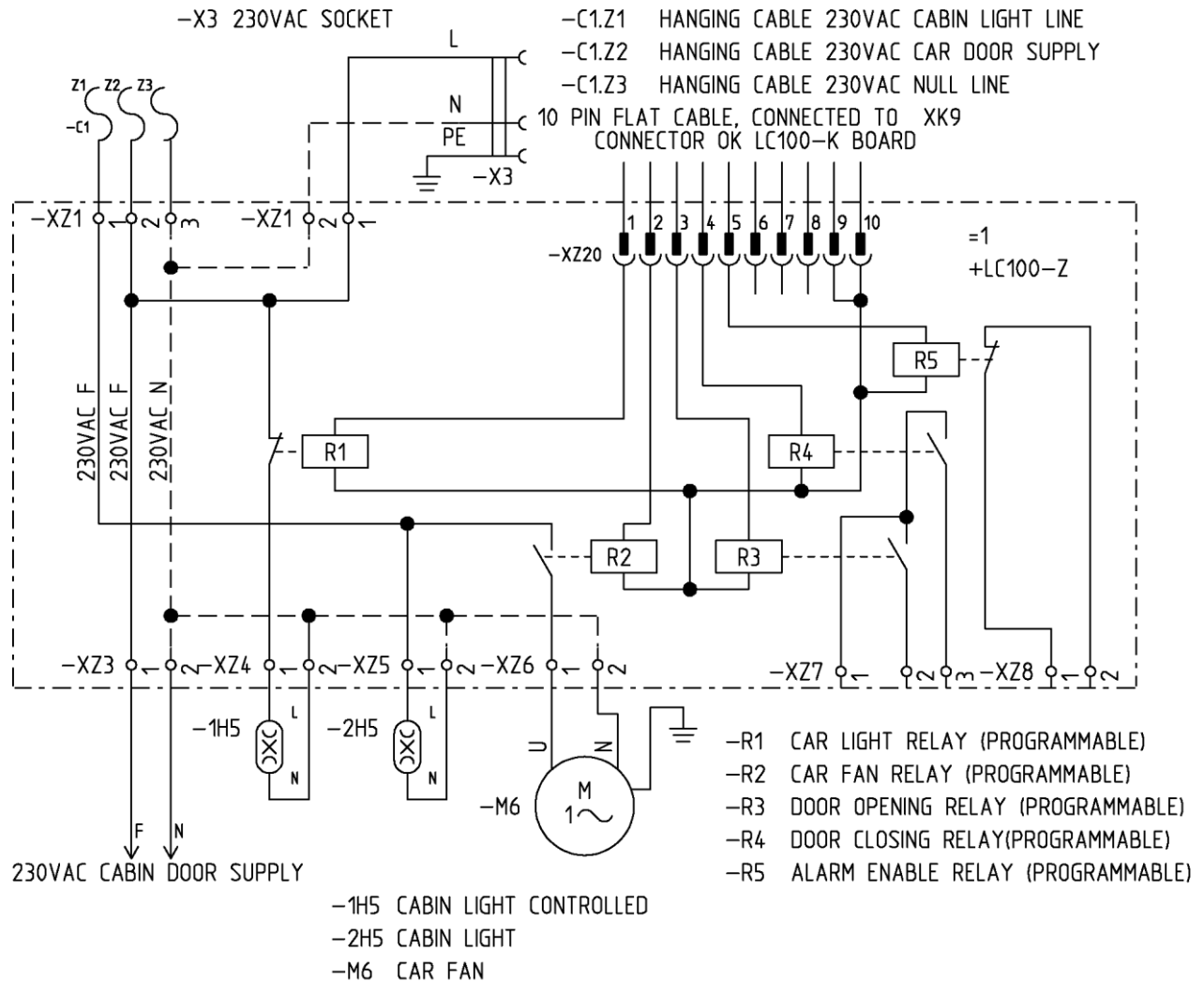
## 2.13 LC100-Z cabin connection board

LC100-Z board is used for connecting the cabin safety circuit, door power, door management, alarm pushbutton, car fan...

Dimensions of plate are 229x72mm and mounting is done on TS35 rail using bracketplates or with spacers. (there are holes on the modul).

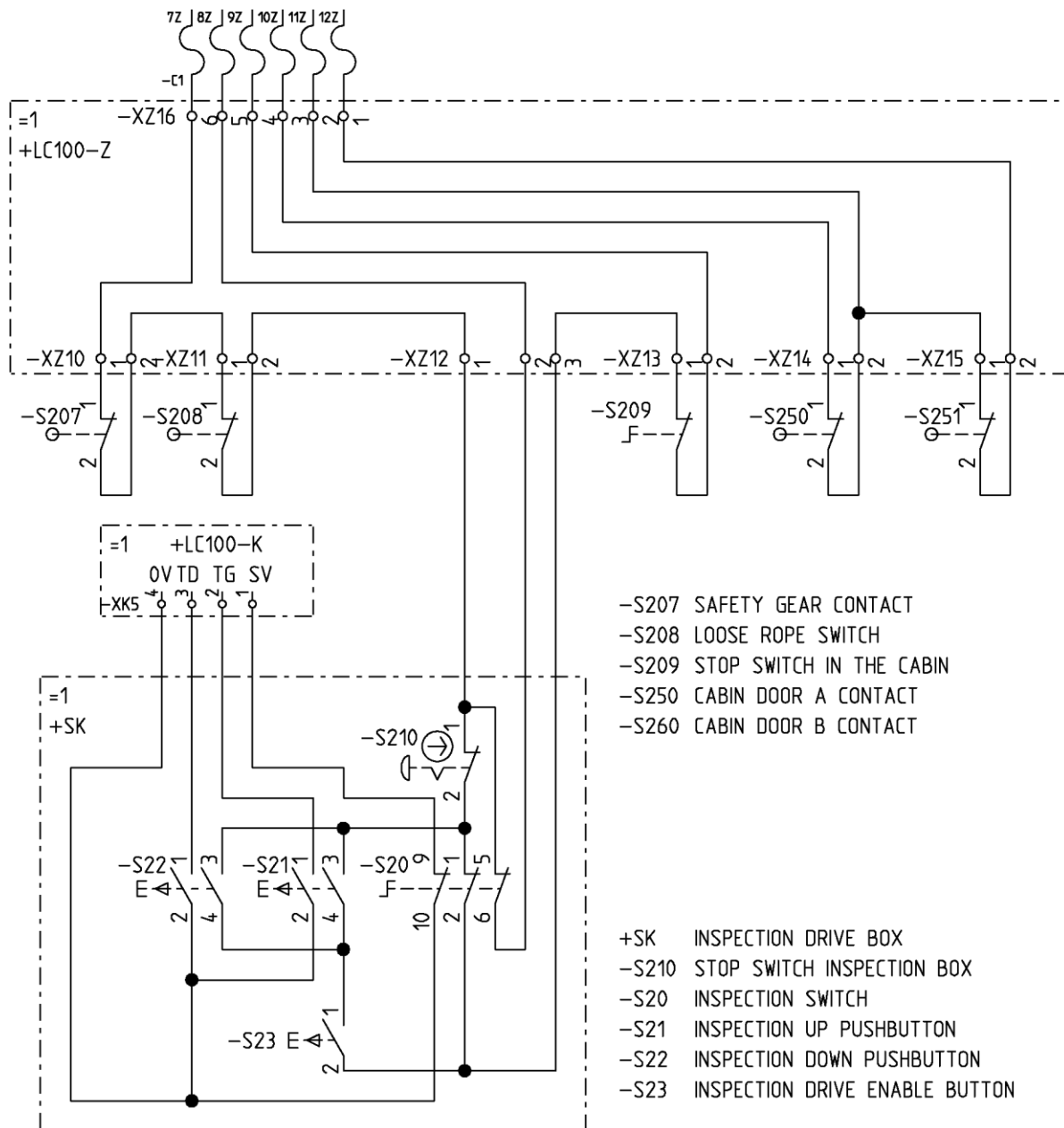
Management of relays on the plate is carried out through input connector XZ20 which connects with LC100-K XK9 output connector. Next to each relay is a status LED indication.

Cabin power supply and door managmet connection diagram:



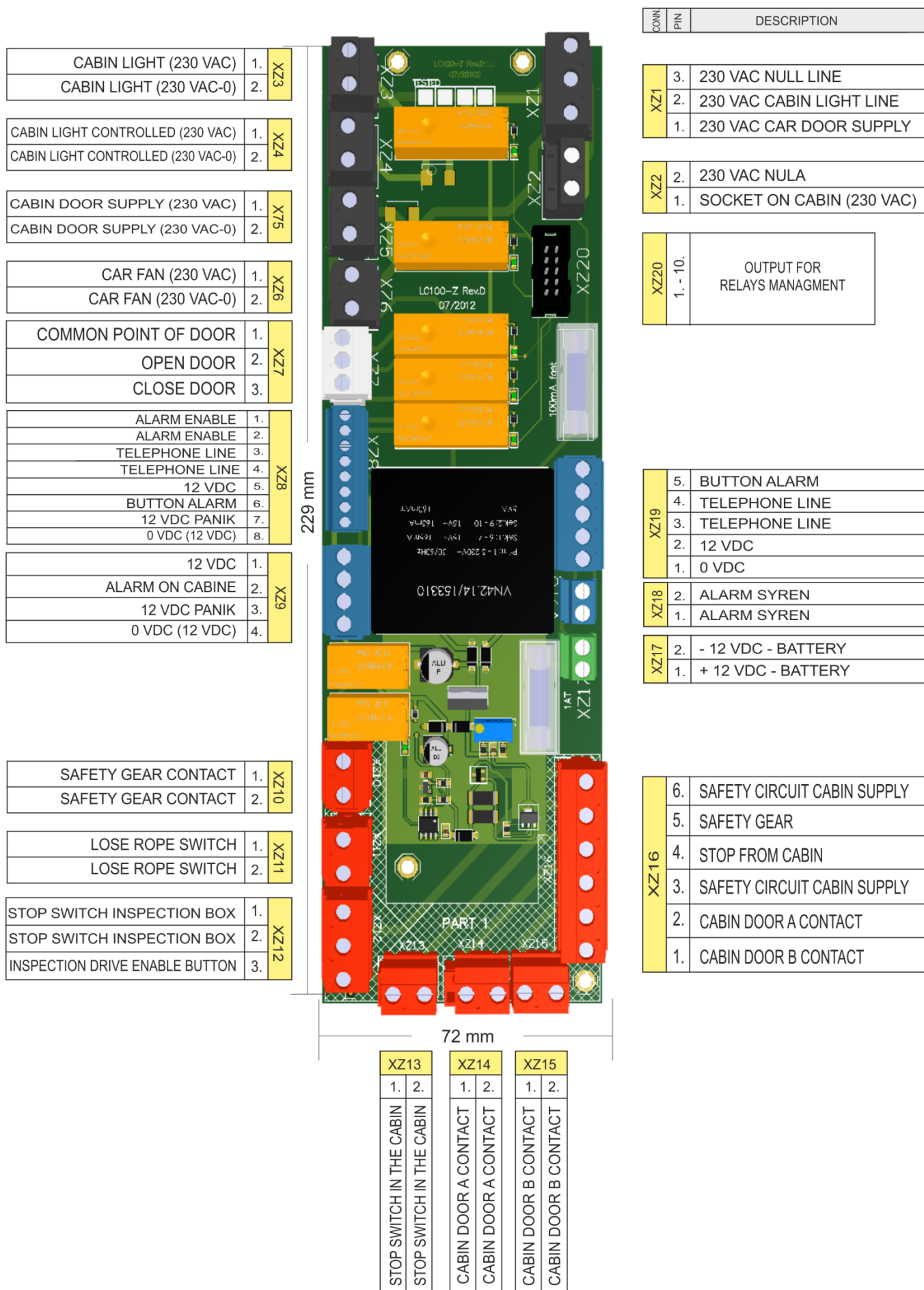
Connectors XZ10 to XZ16 are used to connect safety circuit.

Safety circuit on the cabin connection diagram:



LC100-Z circuit includes an emergency power supply. Circuit for emergency power supply is equipped with a 100mA fuse on the primary side of transformer, and 1A fuse on the side of the 12VDC power supply. On the board is installed potentiometer for setting the battery charging voltage.

Connection diagram for alarm and emergency light is given in [LC100-S](#) board description.

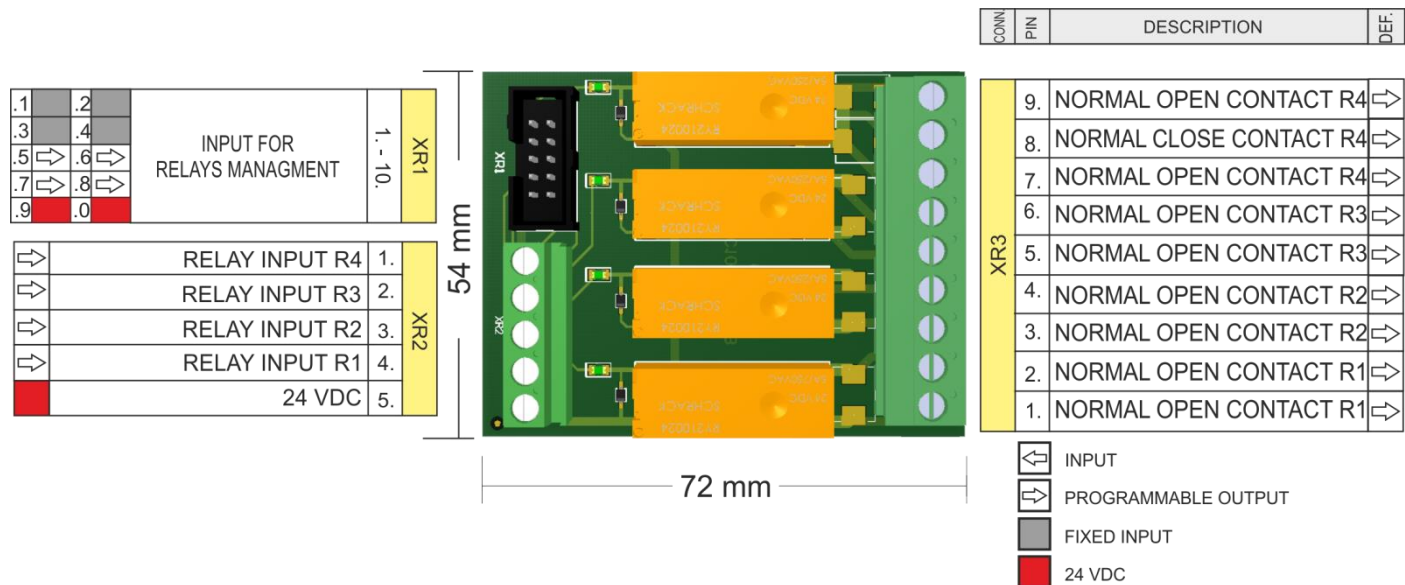


Picture 12 - LC100-Z board

2.14 LC100-R relay board with 4 relays

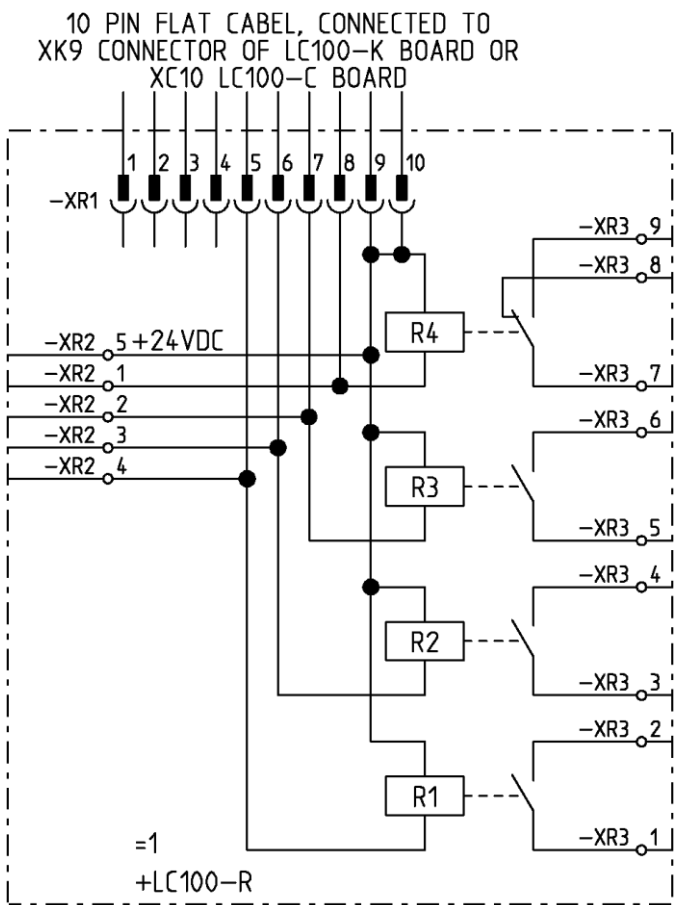
LC100-R is relay circuit board with 4 relays. Management of relays is performed through the 10 pin flat connector XR1 which is connected to XC10 or XK9 connector, management of relays is also possible through XR2 connector.

Relay modul consist of 4 relays – on R1, R2 i R3 normally open contact connected to XR3, on R4 change over contact connected to XR3.



Picture 13 - LC100-R board

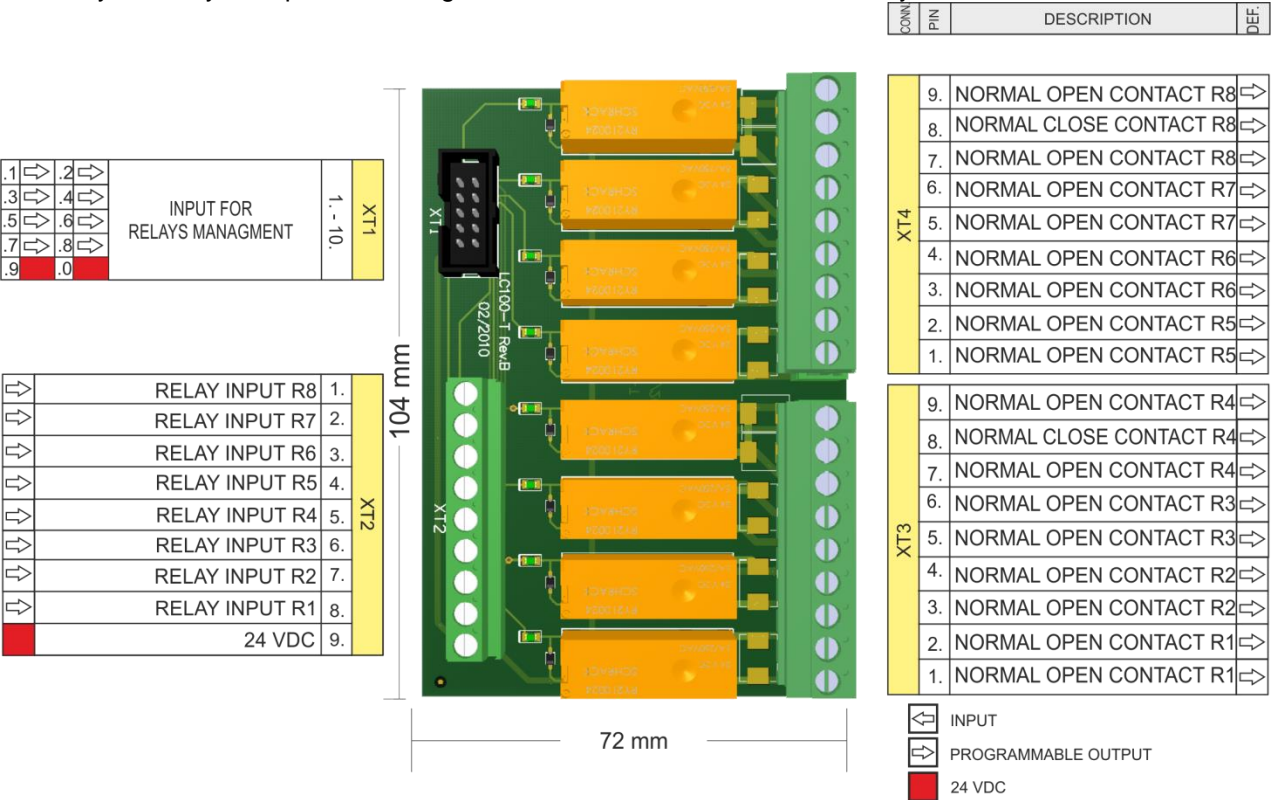
Relay module connection diagram:





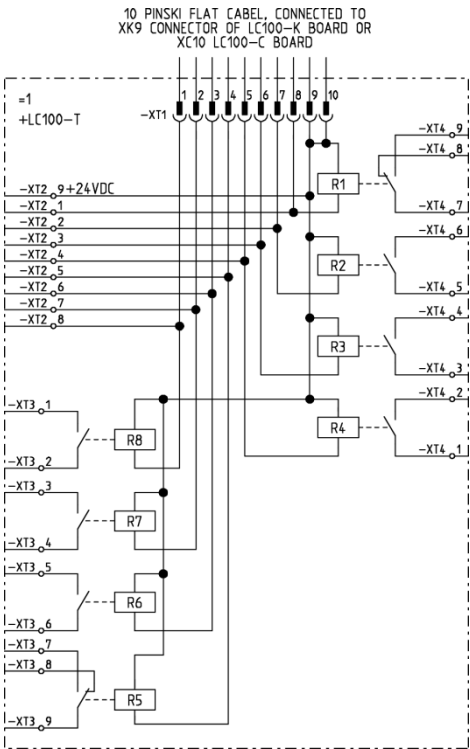
2.15 LC100-T relay board with 8 relays

LC100-R is a relay board with 8 relays. Management of relays is performed through the 10 pin flat connector XT1 which is connected to XC10 or XK9 connector. When relays are powered trough XC10 or XK9 connector then on the board are 6 relays. If relays are powered trough XT2 connector then there are 8 relays.



Picture 53 - LC100-T board

Relay module connection diagram:



## 2.16 LC100-I IN/OUT board

LC100-I is input-output board used mainly on elevators without machine room when there is a control cabinet in the shaft.

LC100-I consist of :

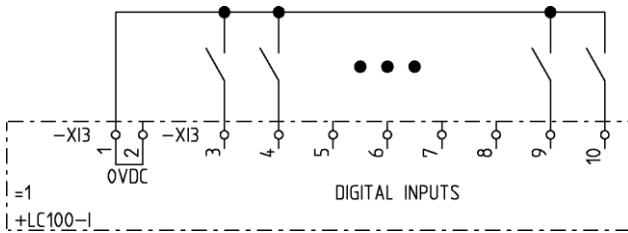
8 digital input connected to connector XI3

4 relay output connected to XI4

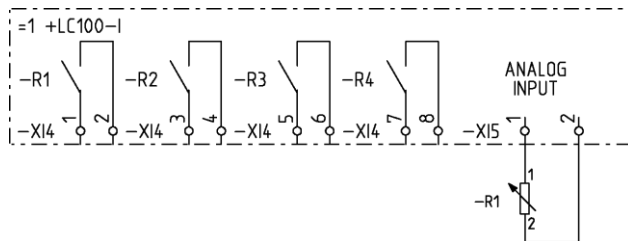
8 digital output connected to XI5

Analog current input 4-20mA on XI5

Connecting the inputs:

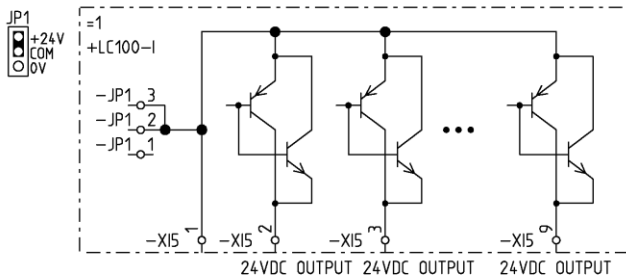


Relay outputs connection:

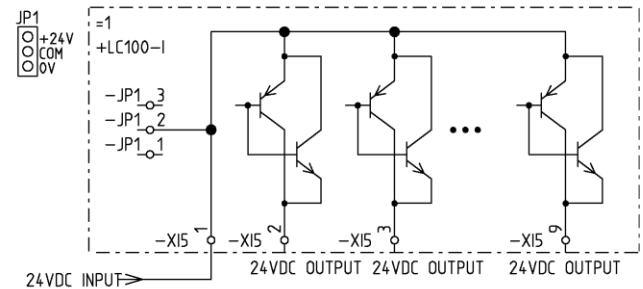


Digital output connection diagram:

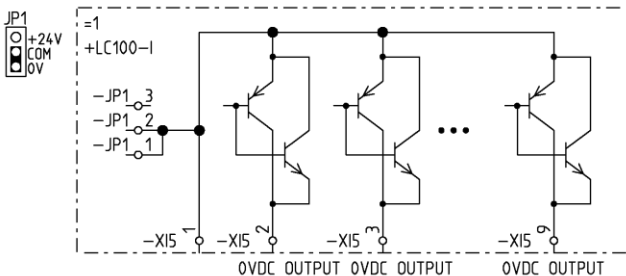
1. USING INTERNAL 24VDC FOR OUTPUTS:



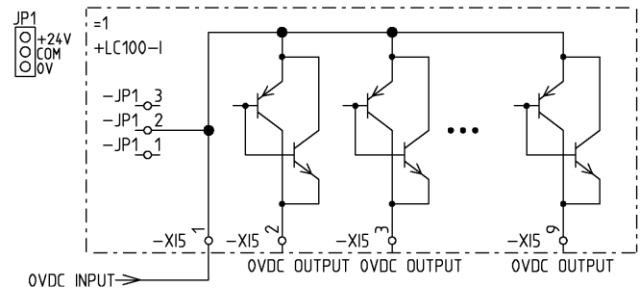
3. USING EXTERNAL 24VDC FOR OUTPUTS

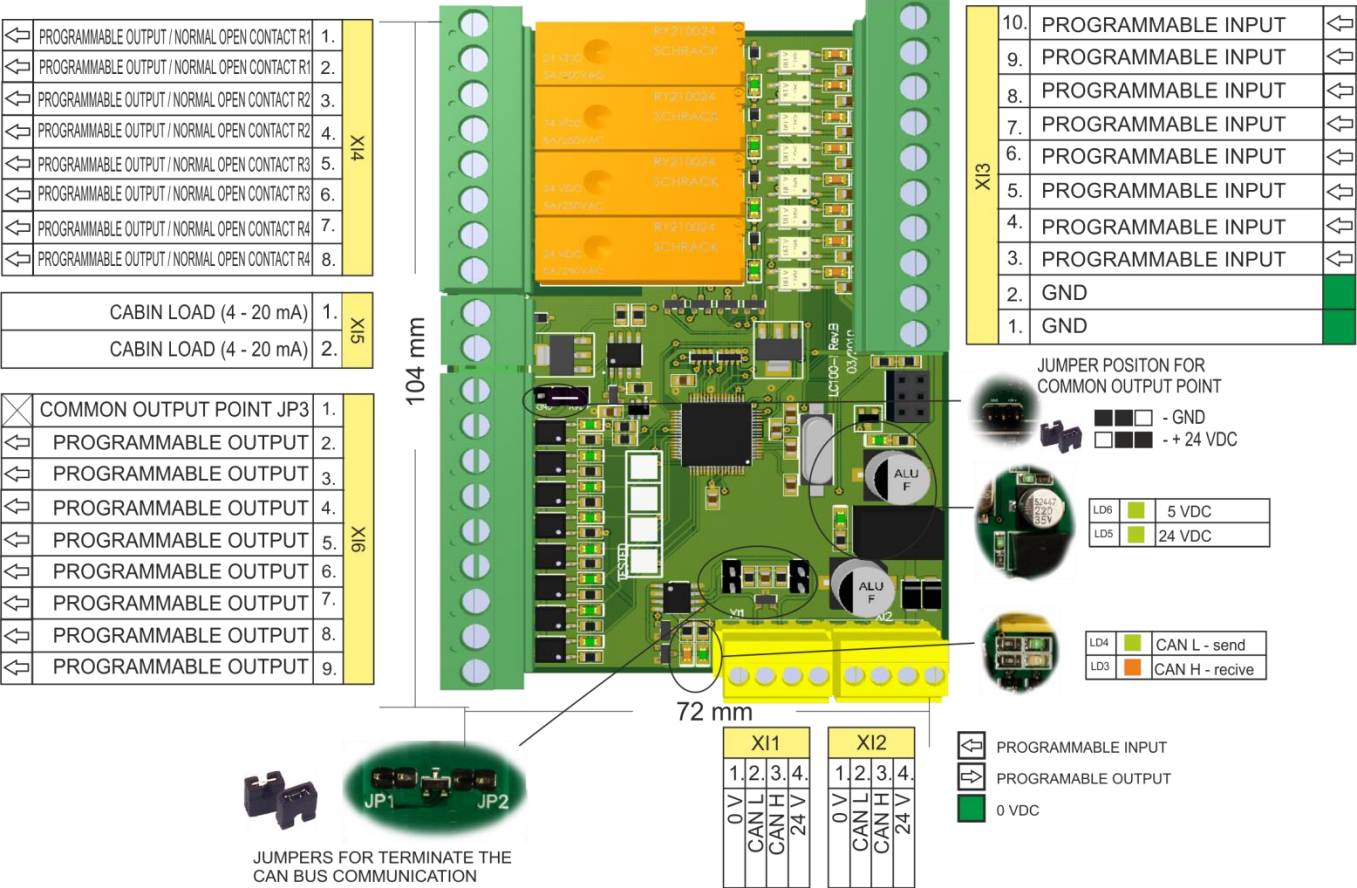


2. USING INTERNAL 0VDC FOR OUTPUTS:



4. USING EXTERNAL 0VDC FOR OUTPUTS





Picture 64 - LC100-I board

## 2.17 Boards for landing calls and signalization

### 2.17.1 LC100-M5 dot matrix display

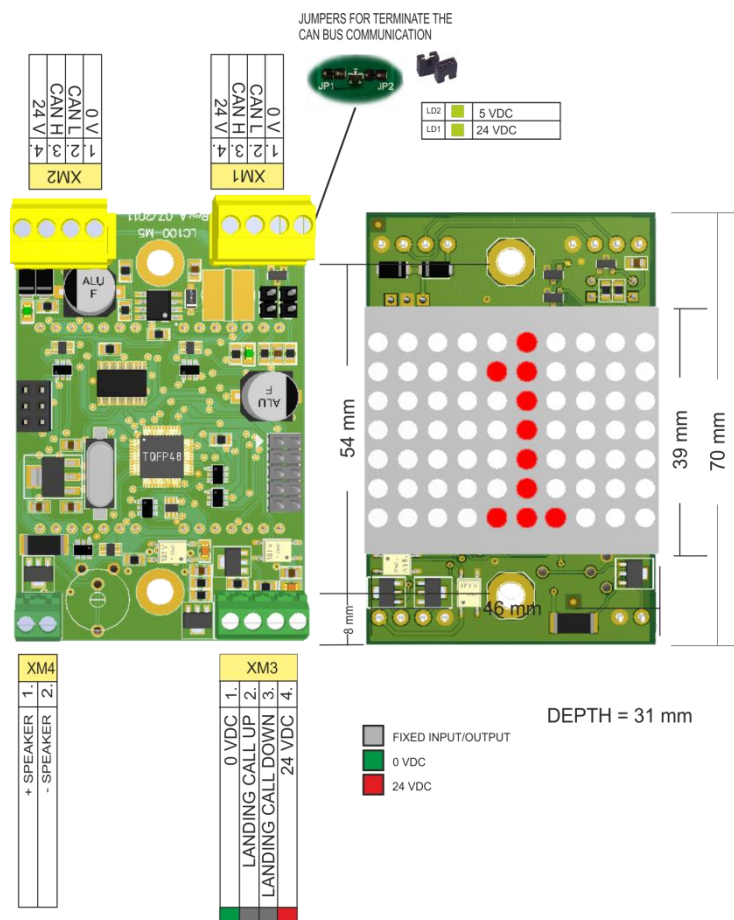
LC100-M5 matrix dot display with resolution 10x7 dots is made in two versions:

- LC100-M5B Blue dot display
- LC100-M5R Red dot display

LC100-M5 displays are used as landing displays with connector for connecting the landing calls. Connection to the displays is made through XC12 connector which is CAN2 bus.

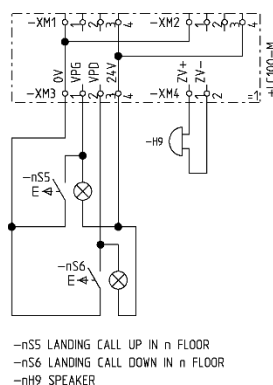
Each display is addressed for a floor. Addressing is done through the additional menu for addressing.

What the displays will show can be set through [P-M-L modules TYPE P](#).



Picture 75 - LC100-M5 matrix display

Connection diagram for connecting the pushbutton:



## 2.17.2 LC100-M6 dot matrix display

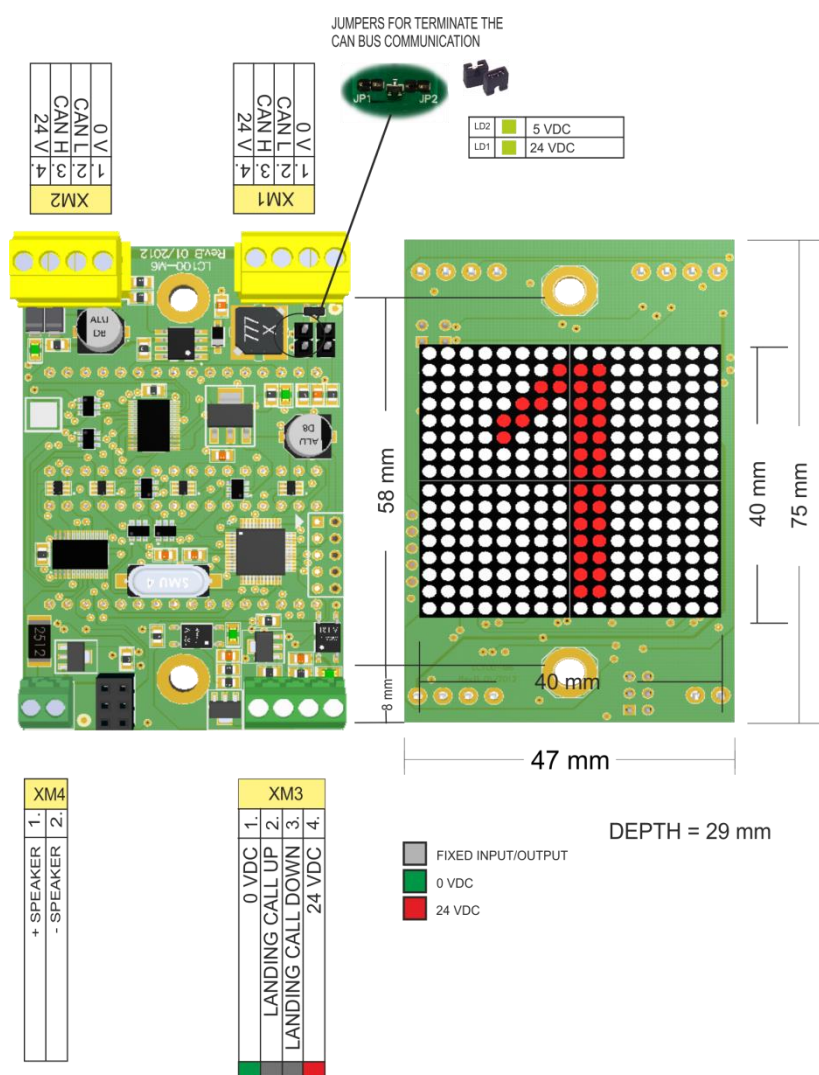
LC100-M6 matrix dot display with resolution 16x16 dots is made in two versions:

LC100-M6B     Blue dot display  
 LC100-M6R     Red dot display

LC100-M6 displays are used as landing displays with connector for connecting the landing calls. Connection to the displays is made through XC12 connector which is CAN2 bus.

Each display is addressed for a floor. Addressing is done through the additional menu for addressing.

What the displays will show can be set through [P-M-L modules TYPE P](#).



Picture 86 - LC100-M6 dot matrix display



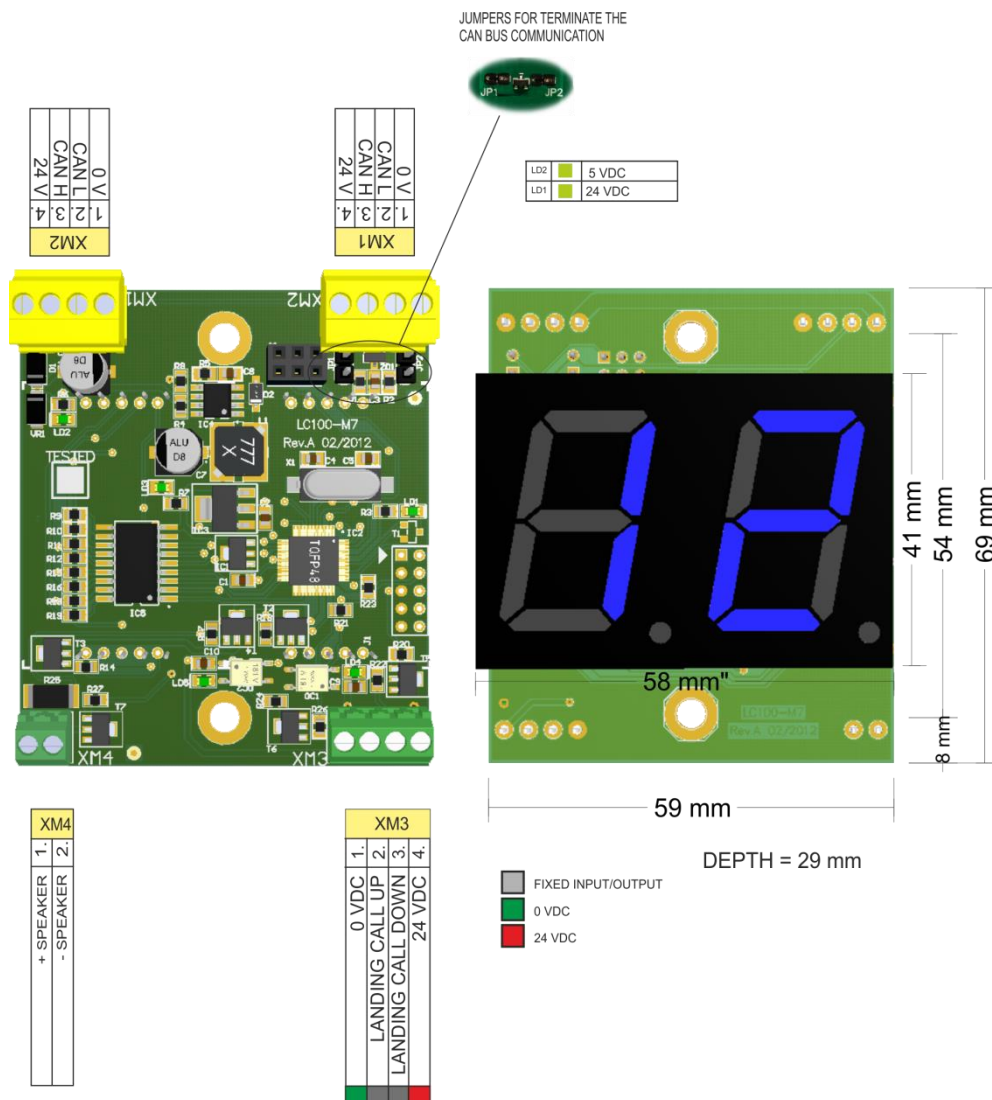
### 2.17.3 LC100-M7 segment display

LC100-M7 landing display is done in two versions:

LC100-M7B     Blue 7-segment display  
 LC100-M7R     Red 7-segment display

LC100-M7 displays are used as landing displays with connector for connecting the landing calls. Connection to the displays is made trough XC12 connector which is CAN2 bus.

Each display is addressed for a floor. Addressing is done through the additional menu for addressing. What the displays will show can be set trough [P-M-L modules TYPE P](#).



Picture 97 - LC100-M7 segment display

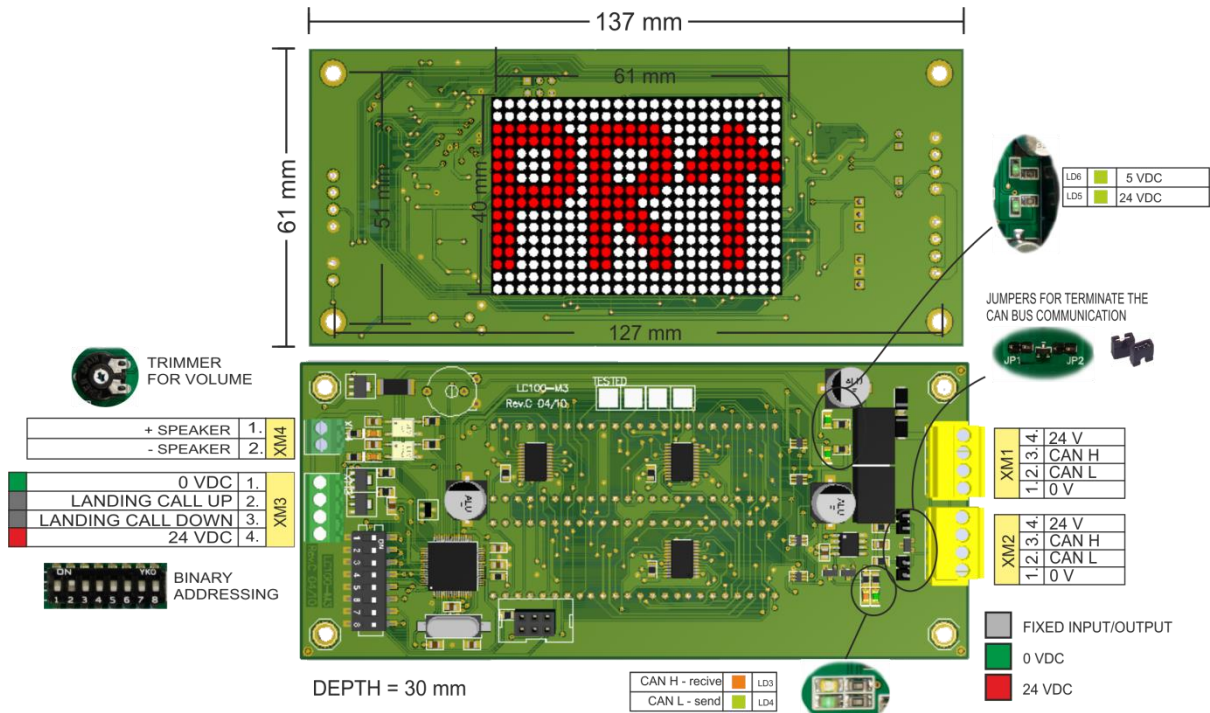
## 2.17.4 LC100-M3 horizontal dot matrix display

LC100-M3 board is produced in two versions:

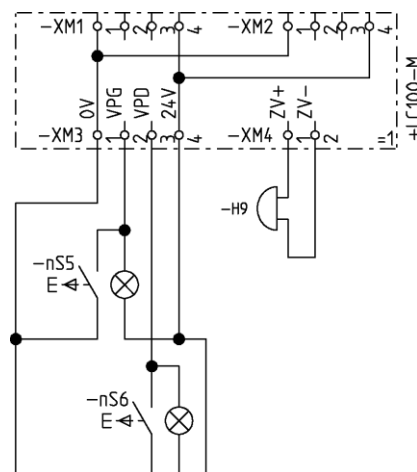
LC100-M3B	Blue DOT matrix display
LC100-M3R	Red DOT matrix display

LC100-M3 displays are used as a cabin displays and can be used as a landing units. When used as a cabin display it is connected to CAN1 bus, and used as a landing call units it is connected to CAN2 bus (connector XM12). Every landing call unit is addressed, addresses are given in the [ADDRESSING TABLE](#). To ensure that the landing calls are processed through landing units parameter [A-9](#) must be set.

Configuration of the units is done through parameters [P-M-L module TYPE-P](#).



Picture 108 - LC100-M3 dot matrix display



-nS5 LANDING CALL UP IN n FLOOR  
 -nS6 LANDING CALL DOWN IN n FLOOR  
 -nH9 SPEAKER

### 2.17.5 LC100-M8 vertical dot matrix display

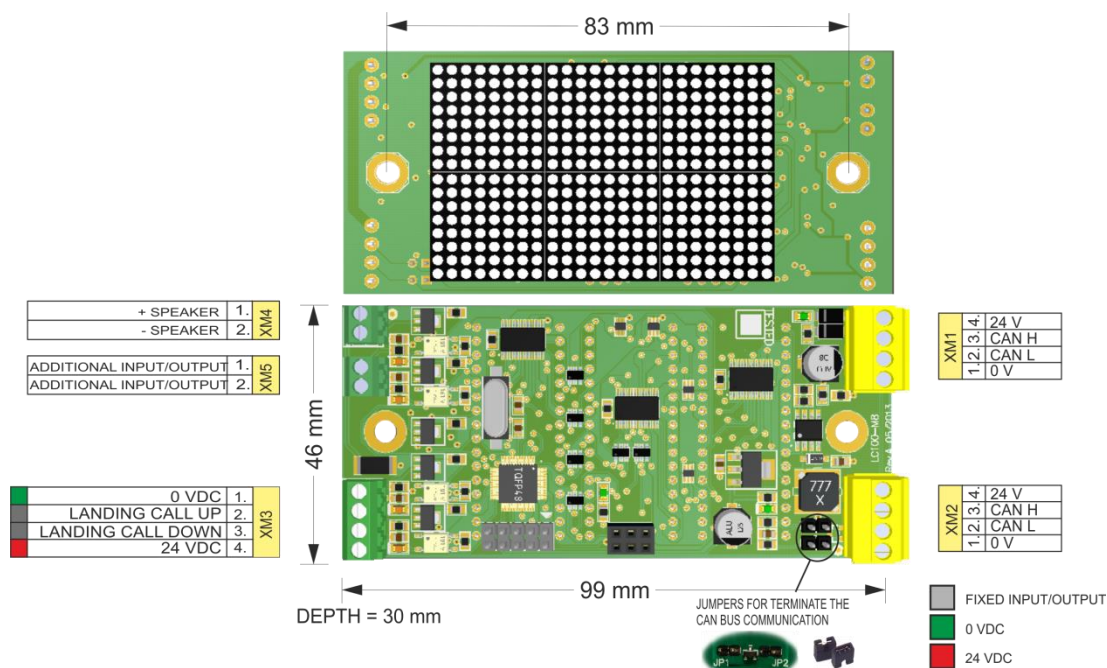
LC100-M8 board is produced in two versions:

LC100-M8B	Blue DOT matrix display
LC100-M8R	Red DOT matrix display

LC100-M8 displays are used as a cabin displays and can be used as a landing units. When used as a cabin display it is connected to CAN1 bus, and used as a landing call units it is connected to CAN2 bus (connector XC12). Every landing call unit is addressed, addressing is done trough addressing menue.

To ensure that the landig calls are procesed through landing units parameter **A-9** must be set.

Configuration of the units is done through parameters **P-M-L module TYPE-P**.



Picture 19 - LC100-M8 dot matrix display

## 2.18 Addressing the landing call units (LC100-M boards)

Addressing is done with microswitches on the landing calls units (LC100M boards).

Switches S1 to S6 are used for addressing landing units, addressing is binary coded given in the table.

STANICA	S1	S2	S3	S4	S5	S6	STANICA	S1	S2	S3	S4	S5	S6
1.	ON	OFF	OFF	OFF	OFF	OFF	21.	ON	OFF	ON	OFF	ON	OFF
2.	OFF	ON	OFF	OFF	OFF	OFF	22.	OFF	ON	ON	OFF	ON	OFF
3.	ON	ON	OFF	OFF	OFF	OFF	23.	ON	ON	ON	OFF	ON	OFF
4.	OFF	OFF	ON	OFF	OFF	OFF	24.	OFF	OFF	OFF	ON	ON	OFF
5.	ON	OFF	ON	OFF	OFF	OFF	25.	ON	OFF	OFF	ON	ON	OFF
6.	OFF	ON	ON	OFF	OFF	OFF	26.	OFF	ON	OFF	ON	ON	OFF
7.	ON	ON	ON	OFF	OFF	OFF	27.	ON	ON	OFF	ON	ON	OFF
8.	OFF	OFF	OFF	ON	OFF	OFF	28.	OFF	OFF	ON	ON	ON	OFF
9.	ON	OFF	OFF	ON	OFF	OFF	29.	ON	OFF	ON	ON	ON	OFF
10.	OFF	ON	OFF	ON	OFF	OFF	30.	OFF	ON	ON	ON	ON	OFF
11.	ON	ON	OFF	ON	OFF	OFF	31.	ON	ON	ON	ON	ON	OFF
12.	OFF	OFF	ON	ON	OFF	OFF	32.	OFF	OFF	OFF	OFF	OFF	ON
13.	ON	OFF	ON	ON	OFF	OFF	33.	ON	OFF	OFF	OFF	OFF	ON
14.	OFF	ON	ON	ON	OFF	OFF	34.	OFF	ON	OFF	OFF	OFF	ON
15.	ON	ON	ON	ON	OFF	OFF	35.	ON	ON	OFF	OFF	OFF	ON
16.	OFF	OFF	OFF	OFF	ON	OFF	36.	OFF	OFF	ON	OFF	OFF	ON
17.	ON	OFF	OFF	OFF	ON	OFF	37.	ON	OFF	ON	OFF	OFF	ON
18.	OFF	ON	OFF	OFF	ON	OFF	38.	OFF	ON	ON	OFF	OFF	ON
19.	ON	ON	OFF	OFF	ON	OFF	39.	ON	ON	ON	OFF	OFF	ON
20.	OFF	OFF	ON	OFF	ON	OFF	40.	OFF	OFF	OFF	ON	OFF	ON

Switch S7 is used for addressing the side when using opposite calls.

Side A S7 set to OFF

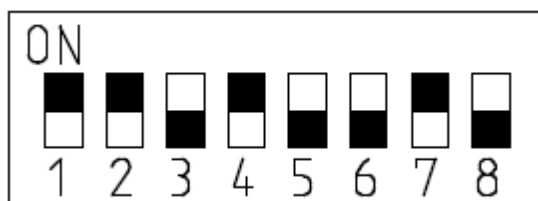
Side B S7 set to ON

Switch S8 is used to adress the elevator in DUPLEX system.

Elevator A S8 set to OFF

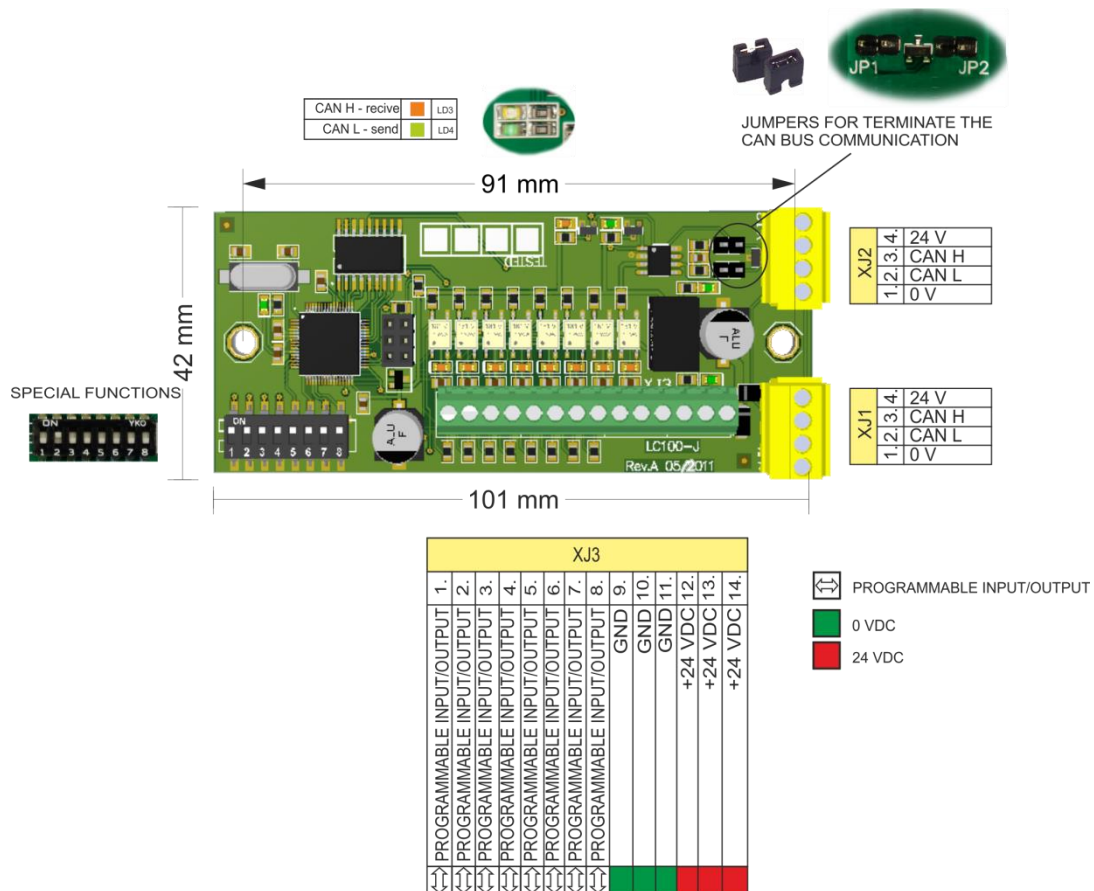
Elevator B S8 set to ON

Example adresssing landihg call on 11th floor, side B SIMPLEX elevator:



## 2.19 LC100-J input/output board

LC100-I board is used as additional input/output board. It is equipped with 8 in/out and two CAN connectors. There are also microswitches for addressing or defining functions according to the installed software.



Picture 20 - LC100-J board

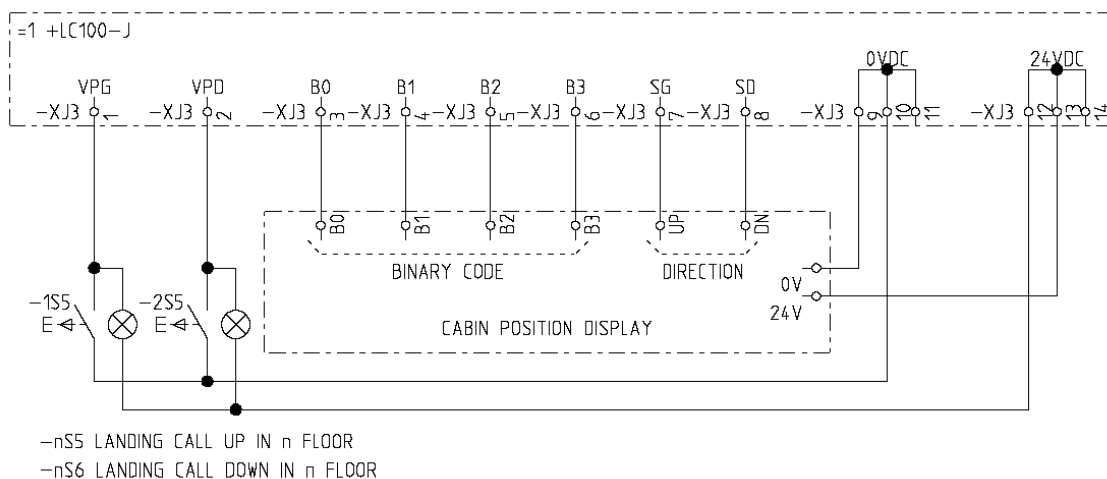
Applications examples using LC100-J board:

1. Floor units SIMPLEX elevator with binary coded landing display.

Floor units are coded according to the addressing table.

LC100-J boards are connected to CAN2 bus, there is no need for parameterization because inputs and outputs are set as shown on the connection diagram.

Connection diagram:





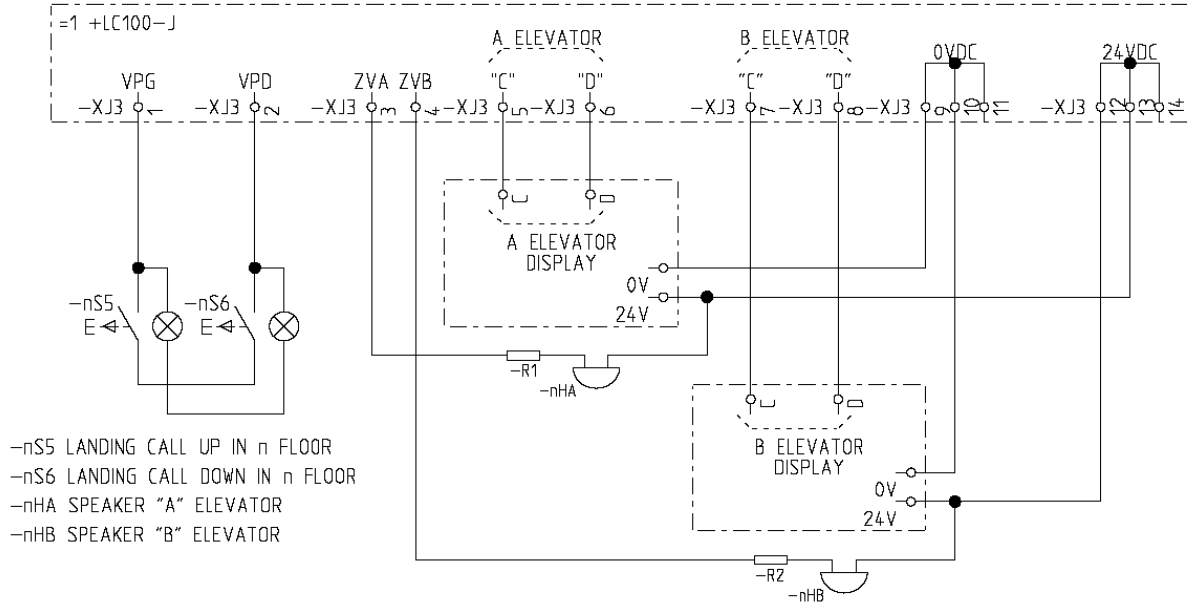
## 2. Floor units DUPLEX elevator with „C“ i „D“ protocol displays.

Floor units are coded according to the addressing table.

LC100-J boards are connected to CAN2 bus, there is no need for parameterization because inputs and outputs are set as shown on the connection diagram.

When connecting speakers on XJ3.3 and 4 there is need for putting resistor with minimal value 100Ω.

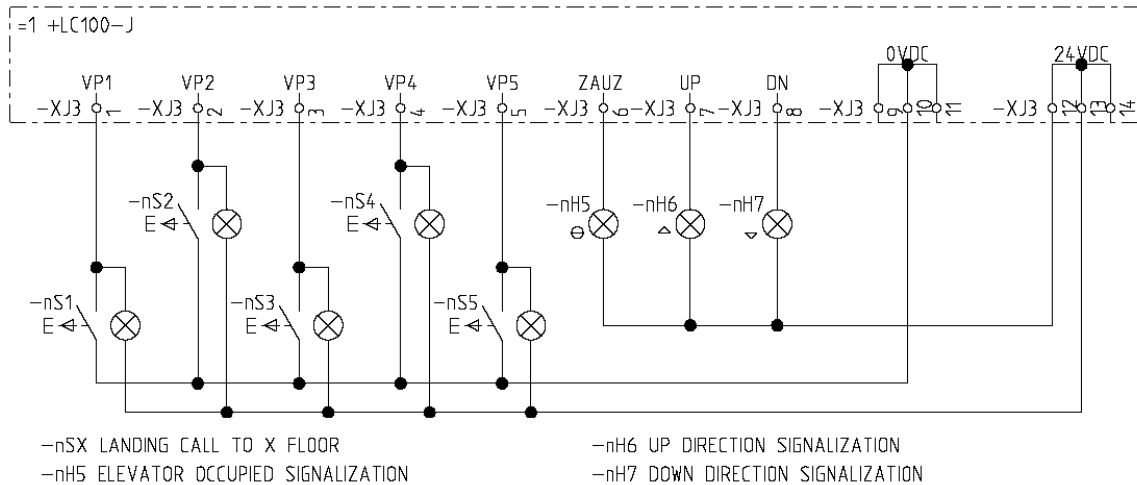
Connection diagram:



## 3. Floor units for elevators without cabin calls.

For LC100-J software for non passenger elevators addressing is not done, inputs are like on connection diagram. All the landing calls are connected in parallel.

Connection diagram:

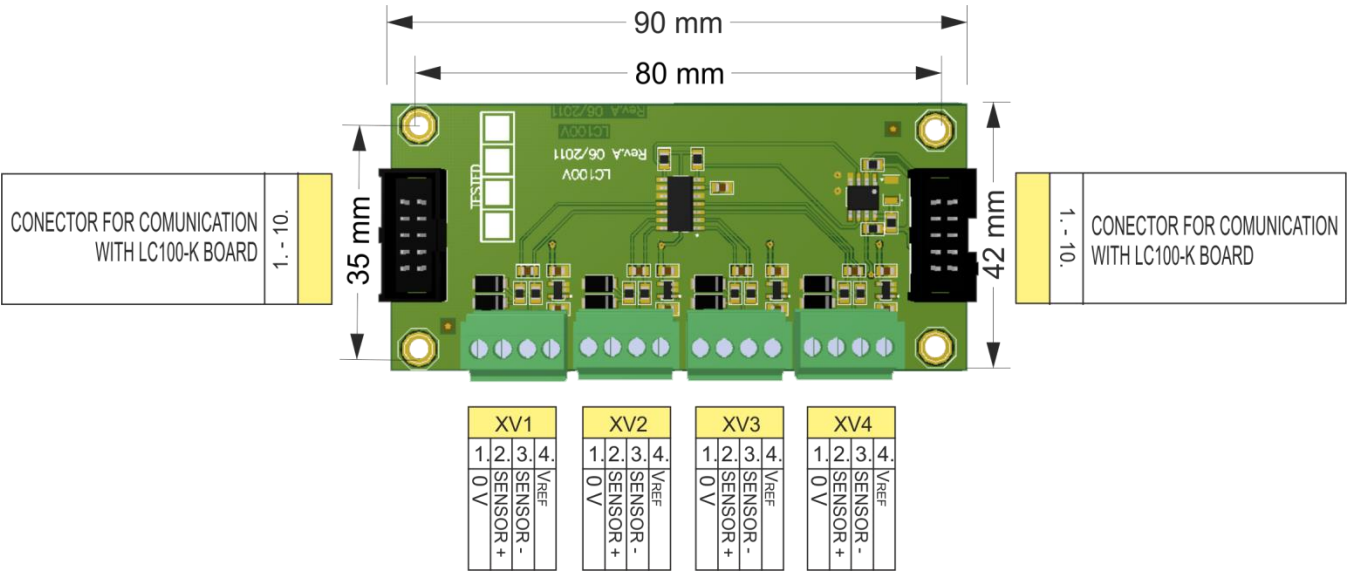


**NOTE!** Here are only some examples on using LC100-J, other configurations are made on request.

2.20 LC100-V load measurement board

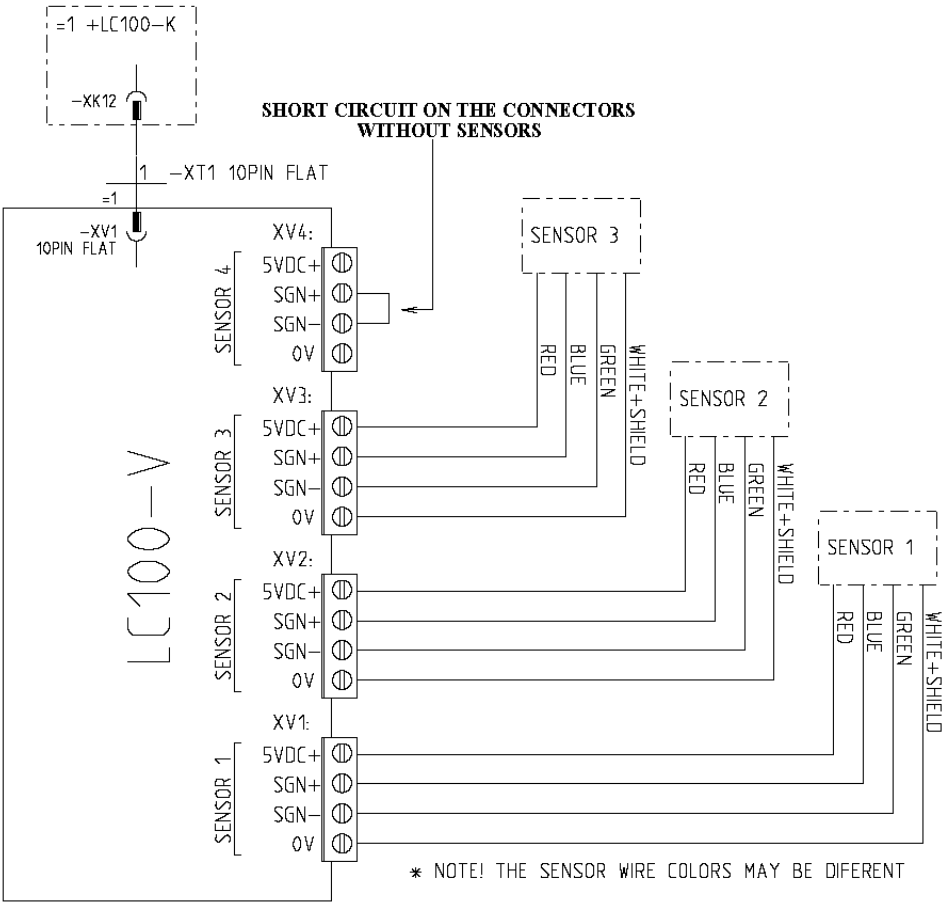
LC100-V board is used to connect the load measurement cells. It has four connectors for connecting up to four cells and a flat connector for connecting it to the LC100-K board.

Programming the load measurement is done with the LC100-D keyboard as explained in additional menu, section 5/7 LOAD MEASUREMENT



Picture 21 LC100-V board

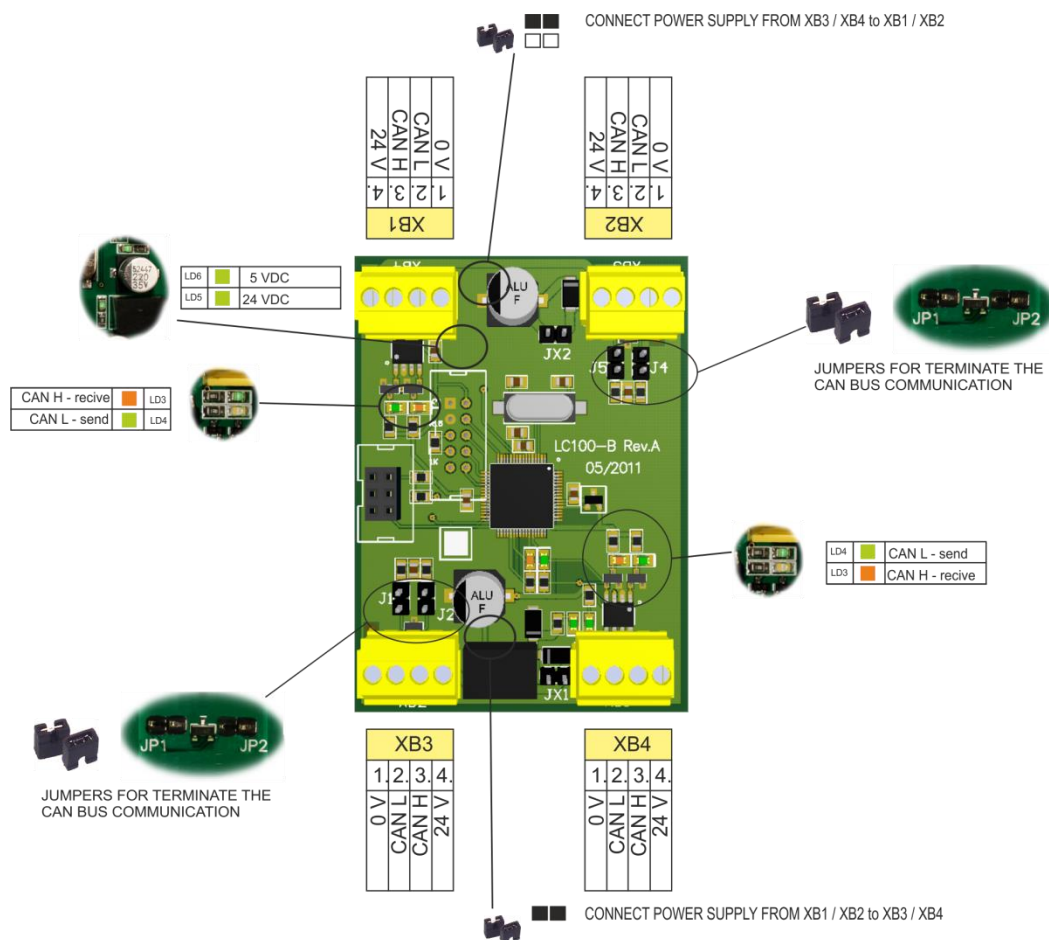
Connection diagram for LC100-V:



## 2.21 LC100-B CAN bridge board

LC100-B CAN bridge board is used for connecting can devices which are not compatible with the LC100 CAN protocol (frequency inverter, encoders...).

Board is connected to CAN1 bus of LC100 trough XB1 or XB2 connector.

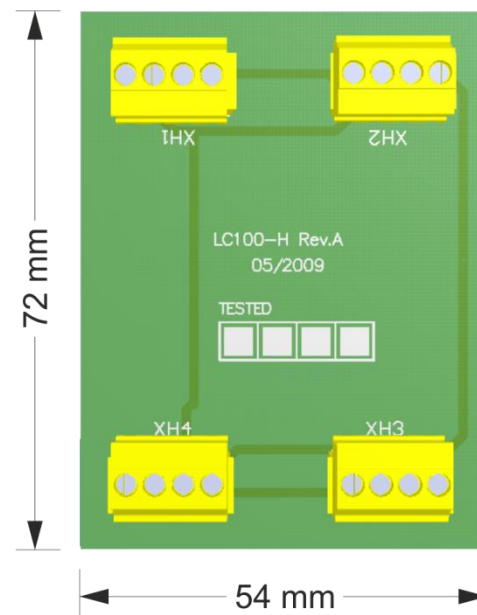
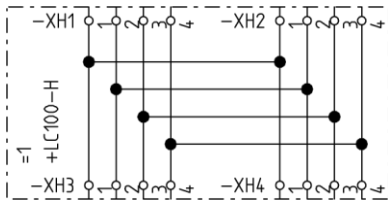


Picture 22 LC100-B board

## 2.22 LC100-H CAN connection board

LC100-H board is used to multiply CAN connectors, it consist of 4 CAN connectors.

LC100-H board connection:



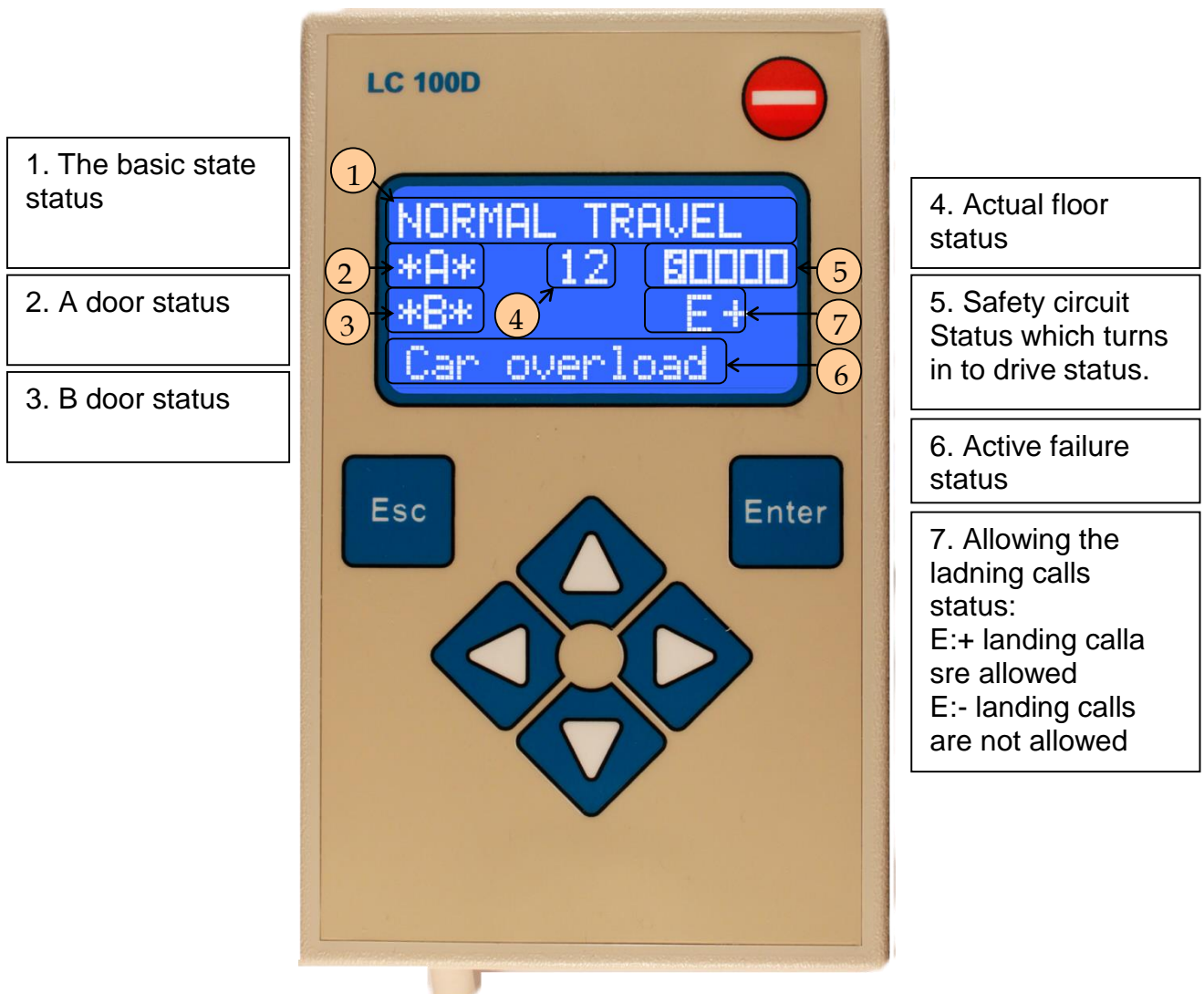
Picture 23 - LC100-H board

### 3. Managment with LC100-D terminal

Parameter setting, diagnostics and monitoring the system LC100 is enabled by using supervision and control terminal LC100-D. Supervisory-control terminal consists of four line LCD screen and the keyboard of the four buttons to scroll through the menus, pressing the Enter key to enter the menu and confirm the parameter, the Escape key to exit the menu and reset button as shown in Figure 3.1. LC100-D terminal can be connected anywhere on the CAN bus communication. After switching to the bus terminal is shows basic display status of elevators and after pressing the enter key it goes to the main menu.

#### 3.1 Basic view

The main display on the LC100-D terminal contains basic status of the system. Display status is divided into 6 parts:





### 3.1.1 Basic elevator state

Basic elevator state is shown on the top line on the primary screen of terminal LC100-D.

Elevator state	ID	Description
Service (35) und.	4	Indicates that the service travel port is not defined <b>FI-235</b> . It is necessary to define service travel port in configuration.
Service travel	5	Indicates that the service travel is active. The message is recorded in the statistics without time delay after switching off service travel <b>FI-235</b> . Cabin calls are canceled. Landing calls are canceled in simplex mode.
Recall control	6	Indicates that the recall travel is activated. The message is recorded in the statistics without time delay after switching on recall travel <b>FI-201</b> .
Service & recall	7	Indicates that the signals are simultaneously active service and recall travel. Service travel is priority and the recall travel is disabled. It is necessary to turn off service travel to get the recall control.
Simulator	8	Indicates that the „Simulator drive“ program is active.
Evacuation	9	Indicates that the evacuation of passengers from elevator due to power failure is in process. Or evacuation input active <b>FI-207</b> . Elevator does evacuation depending on the type of evacuation defined parameter <b>A-04</b> .
Additional power	10	Indicates that the elevator is in the auxiliary power supply mode.
Learning travel	11	Learning travel is in process.
Normal travel	12	Normal travel is in process.

### 3.1.2 Elevator door state

First three characters of the second line indicates door A state, and the first three characters of the third line for door B state. All views of state for door A are the same for door B.

Door state	Description
*A*	Door A stoped
→A←	Closing door A
[A]	Closed door A
←A→	Opening door A
]A[	Open door A
!A!	Error door A
□A□	Indicates that the door A is in open position

### 3.1.3 Display of current elevator station

Display of current elevator station is located in the middle of the second line.



0-Indicates that the learning travel is not done.

1-40-Indicates current station during normal travel.

### 3.1.4 Safety line and drive display

In standby (with no calls) last five characters of second line indicates the status of controlled points in safety circuit:

```
NORMAL TRAVEL
*A*   12  80000
*B*      E+
Car overload
```

-  - Indicates active state
-  - Indicates inactive state

First field indicates the presence of safety circuit voltage at the terminal XS8:3 on the LC100-S board (presence of STOP in safety circuit)

Second field indicates the presence of safety circuit voltage at the terminal XS9:2 (presence of landing door contact)

Third field indicates the presence of safety circuit voltage at the terminal XS10:2 (car door A contact)

Fourth field indicates the presence of safety circuit voltage at the terminal XS10:4 (car door B contact)

Fifth field indicates the presence of safety circuit voltage at the terminal XS11:2 (door lock contact)

After the drive command, safety circuit status turns into drive status:

```
NORMAL TRAVEL
*A*   12 P_M↓
*B*      E+
Car overload
```

- P\_** - Specifies the drive, and next two characters indicates the driving speed and direction.

- M** – Leveling speed
- 1** – Nominal speed 1 speed
- 2** – Second working speed
- 3** – Third working speed
- R1** – Inspection speed 1
- R2** – Inspection speed 2
- P** – Releveling speed
- Z** – Stopping (no speed command)
- ↑** – Direction up
- ↓** – Direction down

### 3.1.5 Active delays and errors display

If an elevator in any way is not in operational state, the bottom line of primary screen will show messages describing the current error, or elevator failure state. All messages that are included in the statistics should be written in a way that the bottom line of primary screen flash on and off every second. When there are two or more error situations, the bottom line of primary screen will alternately show messages describing the current state of elevator.

Table of active errors and failures:

Elevator state	ID	Description
Power turn-on	1	Indicates that the voltage is switched on.
Reset LC100	2	Indicates that the reset button is pressed on the LC100-D keyboard or reset input is active.
Both service inf	15	Indicates that the inputs are active at the same time for button service travel up <b>FI-236</b> and service travel down <b>FI-237</b>
Undefined RU-50	16	Indicates that the upper reference switch input is not defined in system configuration <b>FI-250</b> for rated speed. Service travel is disabled.
Undefined RD-52	17	Indicates that the lower reference switch input is not defined in system configuration <b>FI-252</b> for rated speed. Service travel is disabled.
Upper position - 52	18	Indicates that the upper reference switch is active <b>FI-250</b>
Down position - 52	19	Indicates that the lower reference switch is active <b>FI-252</b>
Low safety space	20	Indicates that the low safety space input is active <b>FI-206</b> . Normal travel possible only after reset over LC100-D terminal.
NGV A3 no RDY	21	Indicates that after drive command is given to NGV hydraulic agregat there is no „ready“ signal active (input <b>FI-288</b> ) and starting is not posible.

Table of load meter and special program state:

Screen message	ID	Description
Priority travel	30	Indicates that the priority tavel is active. Priority travel can be activated over input <b>FI-243</b> (key in cabin) or over the monitoring system. Message is recorded in the statistisc without time delay. By activating priority travel all cabin calls are deleted, elevator takes only one cabin call, landing calls are not processed, and are deleted after the priority travel takes longer than 2 min.
Fireman travel	31	Indicates that the fireman travel is active (fireman program is activated using the same input as priority travel at the time when fire program is activated and elevator stops at the evacuation floor )
Fire program 1	32	Indicates that the fire program is activated. Fire program is activated using adjustable input function <b>FI-210</b> or over the monitoring system. Also evacuation floor parametar must be defined <b>B-07</b> After activating elevator comes at the evacuation floor and standing with open door.
Fire program 2	33	Indicates that the fire program is activated. Fire program is activated using adjustable input function <b>FI-211</b> or over the monitoring system. Also evacuation floor parametar must be defined <b>B-08</b> After activating elevator comes at the evacuation floor and standing with open door.
Fire program 3	34	Indicates that the fire program is activated. Fire program is activated using adjustable input function <b>FI-212</b> or over the monitoring system. Also evacuation floor parametar must be defined <b>B-09</b> After activating elevator comes at the evacuation floor and standing with open door.
Fire program 4	35	Indicates that the fire program is activated. Fire program is activated using adjustable input function <b>FI-213</b> or over the monitoring system. Also evacuation floor parametar must be defined <b>B-10</b> After activating elevator comes at the evacuation floor and standing with open door.
Car full	36	Indicates that the 80% load input is activated (input with parametar <b>FI-241</b> ) more than 10 sec. Elevator ignores landing calls.
Car overload	37	Indicates that the 100% load input in activated (input with parametar <b>FI-242</b> ) more than 10 sec. Elevator stays at the station with open door.

## Safety circuit state messages:

Screen message	ID	Description
STOP switch OFF	38	Indicates that safety circuit is interrupted before the first series of control points on the connector XS8:3, or power circuit interruption between connectors XS1:1 and XS8:3
LD switch OFF	39	Indicates that safety circuit is interrupted at the landing door contact. No power on connector XS9:2
CD-A switch OFF	40	Indicates that safety circuit is interrupted at the car door A contact. No power on connector XS10:2
CD-B switch OFF	41	Indicates that safety circuit is interrupted at the car door B contact. No power on connector XS10:4
LOCK switch OFF	42	Indicates that safety circuit is interrupted at the landing door lock contact. No power on connector XS11:2
Door lock welded	43	Indicates that the landing door lock contact is stuck, or there is a power on connector XS11:2 and there is no door lock command.
UPER LIMIT OFF	44	Indicates that the upper end switch is active, switch is controlled by input function <b>FI-229</b> . System reset is necessary.

## Messages that describe the contactor deactivation failure in the control group:

Screen message	ID	Description
Con.UP not OFF	45	Indicates a direction up contactor deactivation fault. Contactor is controled by defined input <b>FI-220</b> . Contactor must be off xx seconds after system turns off the output function <b>FO-001</b> .
Con.DOWN not OFF	46	Indicates a direction down contactor deactivation fault. Contactor is controled by defined input <b>FI-221</b> . Contactor must be off 2 seconds after system turns off the output function <b>FO-002</b> .
Con.HS not OFF	47	Indicates a high speed contactor deactivation fault. Contactor is controled by defined input <b>FI-223</b> . Contactor must be off 2 seconds after system turns off the output function <b>FO-004</b> .
Con.LS not OFF	48	Indicates a low speed contactor deactivation fault. Contactor is controled by defined input <b>FI-222</b> . Contactor must be off 2 seconds after system turns off the output function <b>FO-003</b> .
Con. MOT not OFF	49	Indicates motor contactors deactivation fault, used with frequency regulated elevators. Contactors are controled by defined input <b>FI-225</b>
Con. Y not OFF	50	Indicates a „star“ contactor deactivation fault, used with hydraulic elevators. Contactor is controled by defined input <b>FI-227</b> . Contactor must be off 2 seconds after system turns off the output function <b>FO-013</b> .
Con. D not OFF	51	Indicates a „delta“ contactor deactivation fault, used with hydraulic elevators. Contactor is controled by defined input <b>FI-228</b> .

Messages that describe the contactor activation failure in the control group:

Screen message	ID	Description
Con.UP not ON	52	Indicates a direction up contactor activation fault. Contactor is controled by defined input <b>FI-220</b> . Contactor must be on 2 seconds after system turns on the output function <b>FO-001</b> .
Con.DOWN not ON	53	Indicates a direction down contactor activation fault. Contactor is controled by defined input <b>FI-221</b> . Contactor must be on 2 seconds after system turns on the output function <b>FO-002</b> .
Con.HS not ON	54	Indicates a high speed contactor activation fault. Contactor is controled by defined input <b>FI-223</b> . Contactor must be on 2 seconds after system turns on the output function <b>FO-004</b> .
Con.LS not ON	55	Indicates a low speed contactor activation fault. Contactor is controled by defined input <b>FI-222</b> . Contactor must be on 2 seconds after system turns on the output function <b>FO-003</b> .
Con.MOT not ON	56	Indicates motor contactors activation fault, used with frequency regulated elevators . Contactors are controled by defined input <b>FI-225</b> .
Brake not ON	57	Indicates a failure to activate electromechanical elevator brake. Brake control is done over brake contact at the input <b>FI-224</b> . Signal must be present while traveling, and max 2 seconds after direction contactors activation.
Inverter not OK	58	Indicates a frequency regulator fault. Controled by input <b>FI-226</b> . Regularity signal must be present all time.
Con. Y not ON	59	Indicates a „star“ contactor activation fault used with hydraulic elevators. Contactor is controled by defined input <b>FI-227</b> . Contactor must be on 2 seconds after sytem turns on the output function <b>FO-013</b> .
Con. D not ON	60	Indicates a „delta“ contactor activation fault used with hydraulic elevators. Contactor is controled by defined input <b>FI-228</b> .
Con FAN not ON	61	Indicates a motor fan contactor fault. Contactor is controled by defined input <b>FI-209</b> . Contactor must be on after system turns on output function <b>FO-018</b> .
SUPPLY not OK	62	Indicates a phase presence and sequence control relay fault. Relay is controled by input <b>FI-204</b> .

Table with warnings and other failures:

Screen message	ID	Description
PTC active	63	Indicates that the resistance of PTC sensor is above limit set by parameter <b>I-02</b> (hot state PTC resistance). Error remains on for another five min after the signal, or once the probe resistnace falls below the value set by parameter <b>I-01</b> (cold state PTC resistance). Current PTC resistance can be monitored in the menu <a href="#">inputs/outputs</a> .
Start failure	64	Indicates that the elevator after establishment of control signals from the control group was not initiated in time set by parameter <b>I-03</b> . As a start control, group takes into account all the signals except for a pulses for copying used in copying type 4 or 5 <b>E-01</b> . Parameter should be set to a sufficient value needed to elevator pass the path between the 2 copying signals when traveling at low speed increased by approximately 20%. After activating the error it is necessary to reset the control disconnecting power supply or using the reset button on LC100-D terminal. Inspection travel is possible.
Movement failure	65	Indicates that the elevator after start from the station has not moved for logner that the time set by parameter <b>I-03</b> . This message is identical to the protection Start failure with the difference that after the start at least one copying signal has changed . It is necessary to reset the control disconnecting power supply or using the reset button on LC100-D terminal.

Screen message	ID	Description
Slow speed fail.	66	Indicates that the elevator is travelling at low speed for longer than the time set by parameter I-04, and that in the meantime stopping switch signal did not activate. Since the above error may occur as a result of copying error (stopping switch) elevator must do a first travel again. It is necessary to reset the control disconnecting power supply or using the reset button on LC100-D terminal.
Leveling failure	67	Indicates that the elevator is traveling at releveing speed for longer than the time set by parameter I-05, and that in the meantime stopping switch signal did not activate. It is necessary to reset the control disconnecting power supply or using the reset button on LC100-D terminal.
Box overtemper.	68	Indicates that the temperature measured by the processor on LC100-C board rose above the value set by parameter I-12.
Con. BRK not OFF	69	Indicates the elevator brake deactivation error. Brake control is done over mechanical contact on input FI-224.

Elevator door error messages:

Screen messages	ID	Description
Door A open err	70	Indicates a door A opening failure: <ul style="list-style-type: none"> <li>- If there are end-switch – Elevator door A were not opened until end-switch, FI-260 in time set by parameter D-13.</li> <li>- If there are no end-switch – after opening sequence, system continues to have the information from safety circuit that the door is closed .</li> </ul>
Door B open err	71	Indicates a door B opening failure: <ul style="list-style-type: none"> <li>- If there are end-switch – Elevator door B were not opened until end-switch, FI-270 in time set by parameter D-21.</li> <li>- If there are no end-switch – after opening sequence, control cabinet continues to have the information from safety circuit that the door is closed.</li> </ul>
Door A close err	72	Indicates a failure closing the door A which means that the door A is not closed until end-switch FI-261 if it exists, or to safety circuit contact if there is no end-switch.
Door B close err	73	Indicates a failure closing the door B which means that the door B is not closed until end-switch FI-271 if it exists, or to safety circuit contact if there is no end-switch.
Landing door err	74	Indicates a landing door contact failure. After the information about cabin door closed over the end-switch FI-261 or FI-271 within 3 seconds did not activate landing door signal from safety circuit.
Car door A err	75	Indicates a cabin door A contact failure. After closing the cabin door A, the system has recieved information on the end-switch FI-261, and within 3 seconds was not activated cabin door A closed signal from safety circuit.
Car door B err	76	Indicates a cabin door B contact failure. After closing the cabin door B, the system has recieved inormation on the end-switch FI-261, and within 3 seconds was not activated cabin door B closed signal from safety circuit.
Door lockine err	77	Indicates a landing door locking failure, that occurs: <ul style="list-style-type: none"> <li>- At the door with mechanical locking 3 seconds after closing the door</li> <li>- At the door with electrical locking 3 seconds after door locking output signal FO-48.</li> </ul>



Screen messages	ID	Description
Obstacle door A	78	Indicates an obstacle signal too long (>30s) while closing door A <b>FI-262</b> . The message is information about input state, elevator is holding the door open until signal deactivation. Function is off during inspection travel.
Obstacle door B	79	Indicates an obstacle signal too long (>30s) while closing door B <b>FI-272</b> . The message is information about input state, elevator is holding the door open until signal deactivation. Function is off during inspection travel.
Photocell door A	80	Indicates a photocell signal active on side A, <b>FI-263</b> . If there is fireman program active photocell input is ineffective. The message is information about input state <b>FI-263</b> , elevator is holding the door open until signal deactivation.
Photocell door B	81	Indicates a photocell signal active on side B, <b>FI-273</b> . If there is fireman program active photocell input is ineffective. The message is information about input state <b>FI-273</b> , elevator is holding the door open until signal deactivation.
Door A open but.	82	Indicates a open door A button signal active <b>FI-264</b> .
Door B open but.	83	Indicates a open door B button signal active <b>FI-274</b> .
Door A close but.	84	Indicates a close door A button signal active <b>FI-265</b> for longer than 30 seconds. The message is information for user, control sets standard exit time at stop <b>D-30=0.0</b> seconds.
Door B close but.	85	Indicates a close door B button signal active <b>FI-275</b> for longer than 30 seconds. The message is information for user, control sets standard exit time at stop <b>D-30=0.0</b> seconds.
Door lim sw A-er	86	The message is information that the door A is both on end-switch open and end-switch close (active inputs <b>FI-260</b> and <b>FI-261</b> ). Door A stops and the elevator is blocked until logic input state is established (door can be on one end-switch only). Function is off during inspection travel.
Door lim sw B-er	87	The message is information that the door B is both on end-switch open and end-switch close (active inputs <b>FI-270</b> and <b>FI-271</b> ). Door B stops and the elevator is blocked until logic input state is established (door can be on one end-switch only). Function is off during inspection travel.
Door in car	89	Indicates that the input for door in the car is active. Function <b>FI-246</b> .
Photo in drive	90	Indicates that the photocell signal <b>FI-263</b> or <b>FI-273</b> interrupted during travel if there is no automatic car door. Cabin call can start elevator. After activating alarm elevator can't be started over landing calls before resetting.

## Elevator positioning error messages:

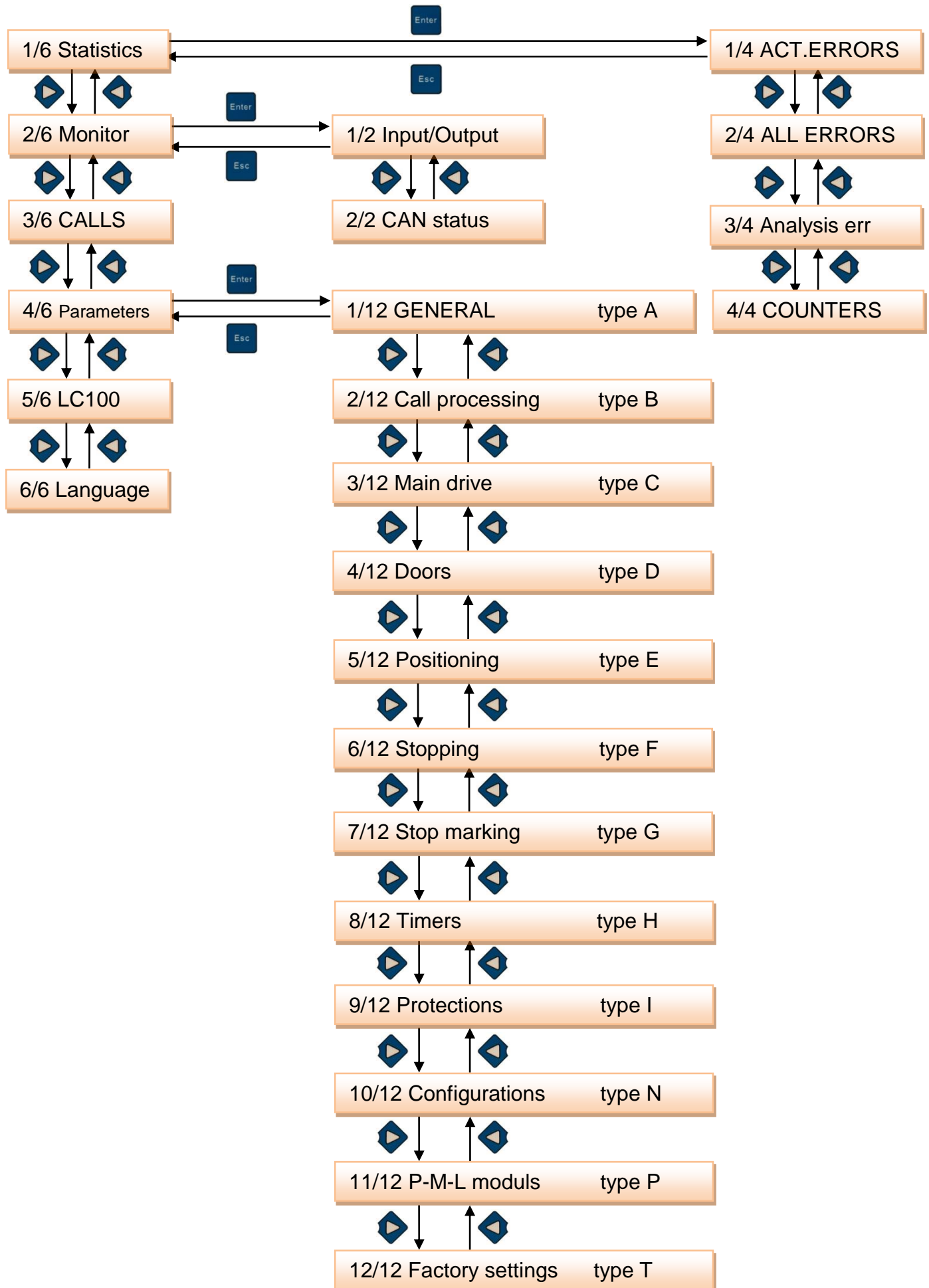
Screen messages	ID	Description
Down/Ref sen.err	91	<p>Elevator stopped at the station, 1st station copied, and the lower reference switch not activated <b>FI-252</b>. Elevator repeats learning travel. Error is effective for the copy type <b>E-01=2</b></p> <p>Possible errors:</p> <ul style="list-style-type: none"> <li>- Too many stations copied so elevator stopped in the station without reference switch.</li> <li>- Elevator is in the 1st station but there is no reference switch.</li> <li>- Elevator is not in the 1st station, but the reference signal appeared and then lost.</li> </ul>
Up /Ref sen.err	92	<p>Elevator stopped at the station, last station copied, and the upper reference switch not activated <b>FI-250</b>. Elevator repeats learning travel. Error is effective for the copying type <b>E-01=2</b></p> <p>Possible errors:</p> <ul style="list-style-type: none"> <li>- Too many stations copied so elevator stopped in the station without reference switch.</li> <li>- Elevator is in the last station but there is no reference switch.</li> <li>- Elevator is not in the last station, but the reference signal appeared and then lost.</li> </ul>
Ref.1 sensor err	93	<p>Both upper and lower reference switch active at the same time <b>FI-250</b> and <b>FI-252</b>. Switch activity is controled with elevator in the station . After establishing the logical input state elevator does learning travel. The message does not indicate during inspection travel and learning travel, if elevator does not start from the station.</p>
Ref.2 sensor err	94	<p>Both upper end lower reference switch for medium speed active at the same time <b>FI-251</b> and <b>FI-253</b>, for the copying type <b>E-01=5</b>. Switch activity is controled with elevator in the station. After establishing the logical input state elevator does learning travel. The message does not indicate during inspection travel and learning travel, if elevator does not start from the station.</p>
Down sensors err	95	<p>Indicates counting downwards switch error, <b>FI-255</b> for the copying type <b>E-01=2</b> or 3. As elevator comes to the lower reference switch, <b>FI-252</b>, system controls counting downwards. If counting state differs by 2 or more as it comes to the reference switch, error indicates. Elevator is not blocked but continues to travel. It is necessary to check the count signals and the lower reference switch.</p> <p>Possible errors:</p> <ul style="list-style-type: none"> <li>- There is more stations than defined by the parameter <b>A-01</b>.</li> <li>- Incorrect counting downwards signal.</li> </ul>
Up sensors err	96	<p>Indicates counting upwards error, <b>FI-254</b> for the copying type <b>E-01=2</b> or 3. As the elevator comes to the upper reference switch, <b>FI-250</b>, system controls counting upwards. If counting state differs by 2 or more as it comes to the reference switch, error indicates. Elevator is not blocked but continues to travel. It is necessary to check the count signals and the upper reference switch.</p> <p>Possible errors:</p> <ul style="list-style-type: none"> <li>- There is more stations than defined by the parameter <b>A-01</b>.</li> <li>- Incorrect counting upwards signal.</li> </ul>
Up stop sen.er	97	<p>Indicates stopping upwards switch deactivation failure <b>FI-256</b>. Entering the deceleration zone system controls signal activity (must be inactive). Otherwise, the elevator can not perform the alignment and the preopening until signal deactivation .</p>
Down stop sen.er	98	<p>Indicates stopping downwards switch deactivation failure <b>FI-257</b>. Entering the deceleration zone system controls signal activity (must be inactive). Otherwise, the elevator can not perform the alignment and the preopening until signal deactivation.</p>
Impulse sens err	99	<p>Indicates copying impulse failure. During drive between two stations there was no change on the input for counting or inductive switch input.</p>

Screen messages	ID	Description
Too many floors	100	<p>Message can be displayed if coping type is E01=4 or 5. First travel (learning travel) is done through entire shaft from top to bottom station. Stopping in station FI-256 and FI-257 and impulse switch XC7:1 are controlled during learning travel. System counts the stations so between stations must be at least 10 impulses. If system didn't count stations correct, first travel is repeated.</p> <p>Possible errors:</p> <ul style="list-style-type: none"> <li>- Elevator pass through end station.</li> <li>- There is too many stations in relation to parameter A-01.</li> </ul>
Too few floors	101	<p>Message can be displayed if coping type is E01=4 or 5. First travel (learning travel) is done through entire shaft from top to bottom station. Stopping in station FI-256 and FI-257 and impulse switch XC7:1 are controlled during learning travel. System counts the stations so between stations must be at least 10 impulses. If system didn't count stations correct, first travel is repeated.</p> <p>Possible errors:</p> <ul style="list-style-type: none"> <li>- No impulse change at all or at least between two stations so system didn't count number of stations in relation to parameter A-01.</li> <li>- Not enough station signals in relation to parameter A-01.</li> </ul>
UCM (A3) fault	102	<p>Indicates fault on the UCM safety device. Device is controlled trough the input with FI-300.</p> <p>Fault can't be reset with resetting the power.</p> <p>Fault must be reset with the reset button on the LC100-D keypad. If service drive is switched on than controller will give a reset command on the first inspection drive command is resetting is possible.</p>
OS gov. NOT ON	103	<p>Indicates that when attempting to drive overspeed governor coil was not powered on. Control of the overspeed governor coil is done trough the input with the function FI-290.</p> <p>Fault must be reset trough reset button on the LC100-D keypad.</p>
OS gov. NOT OFF	104	<p>Indicates that when stopping the elevator overspeed governor coil was not powered off. Control of the overspeed governor coil is done trough the input with the function FI-290.</p> <p>Fault must be reset trough reset button on the LC100-D keypad.</p>
Test UCM (A3)	105	Indicates that there is UCM test active. Test is started trough the LC100/test menu.
Evacuat.failure	109	Indicates that the automatic evacuation last more than time set by parameter I-06. Reset should be done.
Safety device er	110	Indicates safety device for preopening and leveling error. Reset should be done.
Car light error	111	Indicates car light error. Car light is controlled over input FI-245.
Loading program	112	Indicator that building loading program is active.
Unload. program	113	Indicator that building unloading program is active.
Check clock/bat	115	Indicates that setting time is needed. Time can be set trough Time menu. If the time is not remembered while switching off the controller check the battery

## Communication error messages:

Screen messages	ID	Description
Comm err w -I	116	Communication error between LC100-C with LC100-I board.
Comm err w -K	117	Communication error between LC100-C with LC100-K board.
Comm err w -E0	118	Communication error between LC100-C with LC100-E board with address 0.
Comm err w -E1	119	Communication error between LC100-C with LC100-E board with address 1.
Comm err w - C(A)	120	Communication error between LC100-C with LC100-C board of elevator „A“ in duplex mode.
Comm err w - C(B)	121	Communication error between LC100-C with LC100-C board of elevator „B“ in duplex mode.
Comm err w - C(C)	122	Communication error between LC100-C with LC100-C board of elevator „C“ in duplex mode.
Comm err w - C(D)	123	Communication error between LC100-C with LC100-C board of elevator „D“ in duplex mode.
WDT RESET	124	Indicates reset of the processor in the event of unforeseen flow of program code.

## 3.2 Menu structure



## 3.2.1 Statistics

1/6 Statistics	1/4 Active errors
<div style="display: flex; justify-content: space-between;"> <div> <p>Active error</p> <p>Number of error</p> <p>Time when error appeared</p> </div> <div style="border: 1px solid black; background-color: #007bff; color: white; padding: 10px; text-align: center;"> <p>Door A close err</p> <p>P-53 [72] 24</p> <p>=&gt;01-01 01:38:54</p> </div> <div> <p>Floor</p> <p>Message ID</p> </div> </div>	
<p>Active errors menu displays active errors. In the first row error is displayed.</p> <p>P-XX Means number of error. The last error is the one with number 0, the one before is number 1 and so on.</p> <p>[XX] Means message ID.</p> <p>■ XX Means floor in which error occurred.</p> <p>Third row shows date and time when error happened.</p> <p>If there are more active errors, pushing the button left or right it is possible to see other errors.</p>	

1/6 Statistics	2/4 All errors
<div style="display: flex; justify-content: space-between;"> <div> <p>Active error</p> <p>Number of error</p> <p>Time when error appeared</p> <p>Time when error ended</p> </div> <div style="border: 1px solid black; background-color: #007bff; color: white; padding: 10px; text-align: center;"> <p>Lift in STOP</p> <p>P-12 [38] 12</p> <p>=&gt;01-01 01:38:54</p> <p>&lt;=01-01 01:41:24</p> </div> <div> <p>Floor</p> <p>Message ID</p> </div> </div>	
<p>All errors menu displays all errors. In the first row error is displayed.</p> <p>P-XX Means number of error. The last error is the one with number 0, the one before is number 1 and so on.</p> <p>[XX] Means message ID.</p> <p>■ XX Means floor in which error occurred.</p> <p>Third row shows date and time when error happened.</p> <p>Fourth row shows date and time when error ended.</p> <p>If there are more errors, pushing the button left or right it is possible to see other errors.</p>	

1/6 Statistics	3/4 Error analysis
<div style="display: flex; justify-content: space-between;"> <div> <p>Error</p> </div> <div style="border: 1px solid black; background-color: #007bff; color: white; padding: 10px; text-align: center;"> <p>Search message</p> <p>[41]</p> <p>-----</p> <p>Brake not on</p> </div> <div> <p>Message ID</p> </div> </div>	
<p>In the error analysis menu it is possible to filter errors.</p> <p>After entering the menu select the error which is wanted to filter by pressing the buttons left or right. After choosing the error and pressing the „Enter“ button error is filtered.</p> <p>If there are no errors filtered message *no error* appears.</p>	



## 1/6 Statistics

## 4/4 Counters

```
Total counter:
-----
TOTAL=      158
```



```
User counter:
-----
USER=       120
```



```
Daily counter:
-----
12-08=      30
```



```
Monthly counter:
-----
08-11=      90
```



```
Annually counter
-----
2011=       130
```

In „Counter“ menu there are few counters. After entering the menu „total counter is shown.

Pressing the left or right button it is possible to chose user counter, daily counter, monthly counter and annual counter.

Total counter shows number of starts from instaling the elevator. Total counter can be reset though the **RESET** menu.

User counter can be reset so the user can monitor number of drives through specific time interval. Reset of the user menu can be done through **RESET** menu.

Daily counter shows number of drives through a specific day. Counter shows days in active month, changing the day is done by pressing the up or down button.

Monthly counter shows number of drives through a specific month. Counter shows months in active year, changing the month is done by pressing the up or down button.

Annually counter shows number of drives trough a specific year. Counter shows active year, changing the year is done by pressing the up or down button.

### 3.2.2 Monitor

#### 2/6 Monitor

#### 1/2 Input/output

Input/output menu is used to monitor status of the inputs-outputs of all boards in the system. First row shows the LC100 board. Second row displays connector, third row displays pin on the connector. In the fourth row under the pin sign ■ means that the input/output is active, active status for the safety circuit and PTC is shown with the sign □

Chosing the input/output is done by pressing the „Left“ or „right“ button.

```

LC100-S
S8  S9  S10 S11
■ ■  □ □ □ □ □ □
```

Status of the input signals on **LC100-S** board, for connectors XS8, XS9, XS10 and XS11. On the example XS8 and XS9 are active, other inputs are not active.

```

LC100-C
XC5:      XC6 8
1234567890 123 2
■
```

Status of the input signals on **LC100-C** board for connectors XC5, XC6 and XC8

```

LC100-C
Impuls = +00232
Stop   = 4
PTC= 127 Ω □
```

Status of the counter for inductive switch (input XC7.3). Every thime the drive is reset status of the counter is set to 00000. When driving down the counter counts backwards and when driving up counter counts foward.

Third row displays active floor.

Fourth row displays resistance of the motor PTC probe and the status of the PTC input XC8.2. Active input is presented with ■ sign and means that the probe resistance reached the limit defined with the parameter **I-02**.

```

LC100-C
XC10:
12345678
■
```

Status of the output signals on the **LC100-C** board for the connector XC10.

```

LC100-I
XI3:      XI5-ANA
34567890 5.0%
■
```

Status of the input signals on **LC100-I** board for connector XI3, and status of the analog output XI5. Display exist only if the **LC100-I** board is included through parameter **A-05**.

```

LC100-I
XI6:      XI4-REL
23456789 2468
■
```

Status of the output signals on **LC100-I** board for conector XI6, and status of the relay outputs XI4. Display exist only if the **LC100-I** board is included through parameter **A-05**.

```

LC100-K
XK4: XK5: XK6:
123 123 1245789
■ ■ ■
```

Status of the input signals on **LC100-K** board for connectors XK4, XK5 and XK6. Display exist only if the **LC100-K** board is included through parameter **A-06**.

```

LC100-K
XK8: XK10: XK11:
123 1235 1235
■ ■ ■
```

Status of the input signals on **LC100-K** board for connector XK8, and status for input signals for connectors XK10 and XK11. Display exist only if the **LC100-K** board is included through parameter **A-06**.

```

LC100-K
XK9:
12345678

```

Status of output signals on **LC100-K** board for connector XK9. Display exist only if the **LC100-K** board is included through parameter **A-06**.

```

LC100-FC(K)
XF3:   XF4:
1234567812345678

```

Status of input/output signals on **LC100-F** board address „C“ connected to LC100-K board for connectors XF3 and XF4. Display only exist if the LC100-F board adress „C“ is included through parameter **A-06**.

```

LC100-FD(K)
XF3:   XF4:
1234567812345678

```

Status of input/output signals on **LC100-F** board address „D“ connected to LC100-K board for connectors XF3 and XF4. Display only exist if the LC100-F board adress „D“ is included through parameter **A-06**.

```

LC100-E0
XE3:   XE4:
1234567812345678

```

Status of input output signals on **LC100-E** board address „0“ for connectors XE3 and XE4. Display only exist if the LC100-E board address „0“ is included through parameter **A-07**.

```

LC100-FC(E0)
XF3:   XF4:
1234567812345678

```

Status of the input/output signals on **LC100-F** board address „C“ conected to LC100-E board address „0“ for connector XF3 and XF4. Display only exist if the LC100-F board address „C“ is included through parameter **A-07**.

```

LC100-FD(E0)
XF3:   XF4:
1234567812345678

```

Status of the input/output signals on **LC100-F** board address „D“ conected to LC100-E board address „0“ for connector XF3 and XF4. Display only exist if the LC100-F board address „D“ is included through parameter **A-07**.

```

LC100-E1
XE3:   XE4:
1234567812345678

```

Status of input output signals on **LC100-E** board address „1“ for connectors XE3 and XE4. Display only exist if the LC100-E board address „1“ is included through parameter **A-08**.

```

LC100-FC(E1)
XF3:   XF4:
1234567812345678

```

Status of the input/output signals on **LC100-F** board address „C“ conected to LC100-E board address „1“ for connector XF3 and XF4. Display only exist if the LC100-F board address „C“ is included through parameter **A-08**.

```

LC100-FD(E1)
XF3:   XF4:
1234567812345678

```

Status of the input/output signals on **LC100-F** board address „D“ conected to LC100-E board address „1“ for connector XF3 and XF4. Display only exist if the LC100-F board address „D“ is included through parameter **A-08**.

```

A-01 PML A-10
1234567890
.2  ■ ■
.3  ■ ■

```

Status of the input/output signals on **LC100-P**, M or L boards for pins 2 and 3 on connector XP3 or XM3. A-10 means first ten adreses of P or M boards on side „A“. Second row presents floor, third row is status of the pin 2, fourth row is the status of the pin 3. Display only exist if the P or M boards are included through parameter **A-09**.

```

A-11  PML  A-20
1234567890
.2  ==
.3  ==

```

Status of the input/output signals on [LC100-P](#), M or L boards for pins 2 and 3 on connector XP3 or XM3. A-20 means second ten adresses of P or M boards on side „A“. Second row presents floor 1=adress 11, 2=adress 12, and so on. Third row is the status of the pin 2, fourth row is the status of the pin 3. Display only exist if the P or M boards are included through parameter [A-09](#).

Next dysplay is A-30 which is status for addreses 21 to 30 same as for A20, than also A-40 for addreses 31 to 40.

```

B-01  PML  B-10
1234567890
.2  ==
.3  ==

```

Status of the input/output signals on [LC100-P](#), M or L boards for pins 2 and 3 on connector XP3 or XM3. B-10 means first ten adresses of P or M boards on side „B“. Second row presents floor, third row is status of the pin 2, fourth row is the status of the pin 3. Display only exist if the P or M boards are included through parameter [A-09](#).

```

B-11  PML  B-20
1234567890
.2  ==
.3  ==

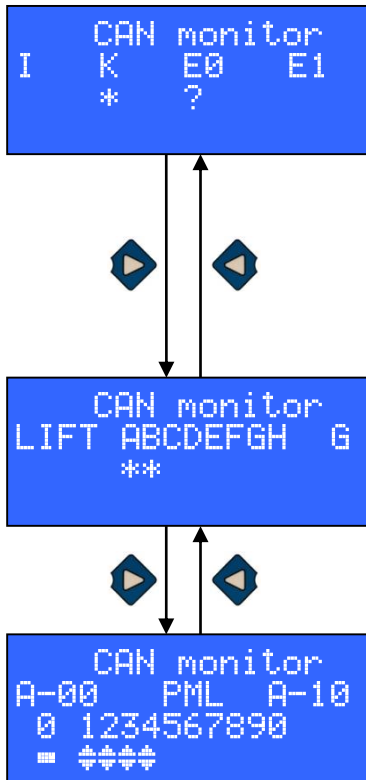
```

Status of the input/output signals on [LC100-P](#), M or L boards for pins 2 and 3 on connector XP3 or XM3. A-20 means second ten adresses of P or M boards on side „B“. Second row presents floor 1=adress 11, 2=adress 12, ond so on. Third row is the status of the pin 2, fourth row is the status of the pin 3. Display only exist if the P or M boards are included through parameter [A-09](#).

Next dysplay is B-30 which is status for addreses 21 to 30 same as for B-20, than also B-40 for addreses 31 to 40.

## 2/6 Monitor

## 2/2 CAN status



In CAN status menu it is possible to see status of communication between main control board LC100-C with other LC100 units connected to CAN bus.

After entering the menu communication with LC100-I, K, E0 and E1 board is displayed.

Sign „\*“ means that the communication with the board is correct. If the communication is not correct sign „?“ will appear. Units which don't have any sign are not included in the system through parameter [A-05](#) to [A-08](#).

Pushing the „right“ button display shows next communication status:

This display shows communication status with other elevators in multiplex and communication status with the LC100-G board.

Next display is CAN communication status for P or M boards address „A“ on floors 1 to 10, and communication status for P or M board with address „0“.

For **SIMPLEX** elevators sign “■” means that the communication is correct.

For **DUPLEX** elevators sign for communication is:

Sign „▲“ for „A“ elevator

Sign „▼“ for „B“ elevator

Next display is A-20 which is status of communication for P or M board address „A“ on the floors 11 to 20, then A-30 for floors 21 to 30, A-40 for floors 31 to 40.

Next are communication statuses for P or M boards addressed „B“. B-10 for floors 1 to 10, B-20 for floors 11 to 20, B-30 for floors 21 to 30 and B-40 for floors 31 to 40.

### 3.2.3 Calls

#### 3/6 Calls

1	▲	■	◆	10
11	▼	-		20
21		□		30
31				40



1	▲	■	◆	10
11	▼	-		20
21		□		30
31				40



1	▲	■	◆	10
11	▼	-		20
21		□		30
31				40



1	▲	■	◆	10
11	▼	-		20
21		■		30
31				40

In the calls menu it is possible to monitor cabin and landing calls. It is also possible to assign a cabin call.

First row is reserved for monitoring the calls from first ten floors.

Second row shows calls for floors 11 to 20, third floor is for calls 21 to 30 and fourth row is for calls 31 to 40.

„■“ presents active cabin call.

„▲“ presents active landing call up.

„▼“ presents active landing call down.

„□“ presents cursor position on the display.

„-“ presents active position of the cabin.

At the same time there can be active cabin and the landing call on the same floor which is then shown as in example where in the 7th floor are active landing call up and landing call down. In 9th floor active are both landing calls and cabin call.

To assign a cabin call, set a cursor with the buttons left, right, up and down to wanted floog and press enter button. In the example there is set cabin floor for station 23.



## 4. Parameters

Menu parameters is used for monitoring and setting parameters of the LC100 system. Viewing the parameters is possible without password while to change the values of parameters password is needed.

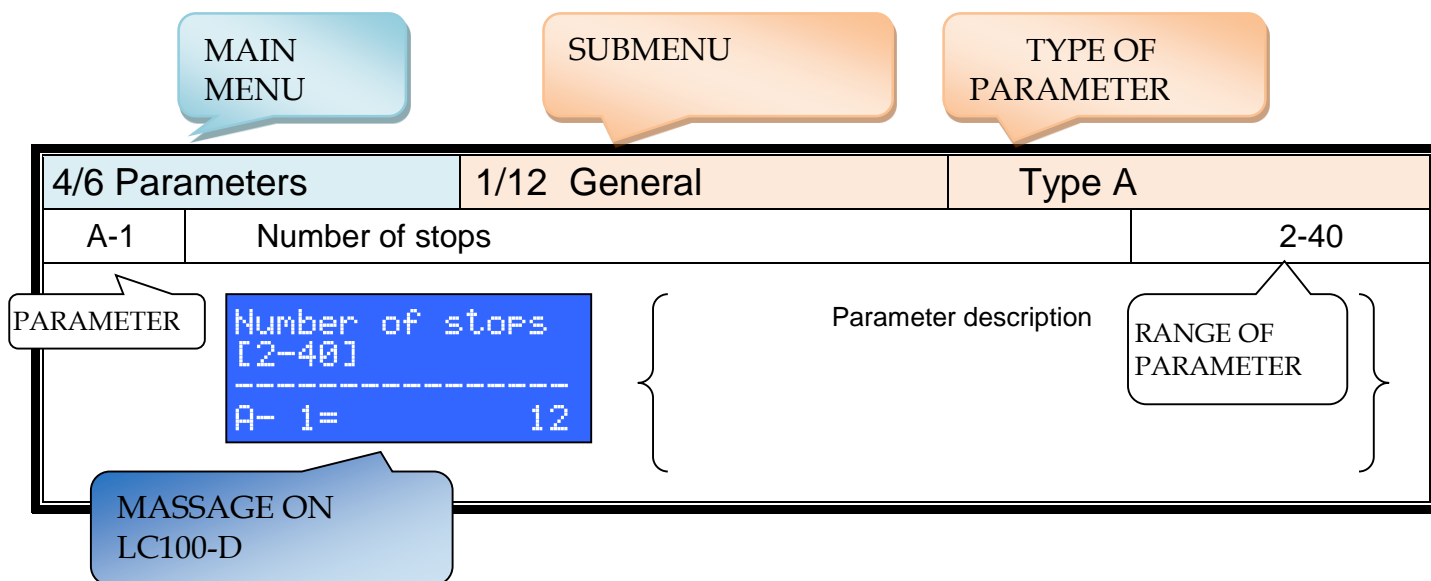
Parameters are divided into 12 submenus:

1/12	General	type A
2/12	Call processing	type B
3/12	Main drive	type C
4/12	Doors	type D
5/12	Positioning	type E
6/12	Stopping	type F
7/12	Stop marking	type G
8/12	Timers	type H
9/12	Protections	type I
10/12	Configurations	type N
11/12	P-M-L moduls	type P
12/12	Factory settings	type T

After entering the „parameters“ menu ba pressing left or right button choosing the parameters submenu is made. After choosing the submenu entering is done by pressing the „enter“ button. Overview of parameters is done by pressing left or right button, choosing the parameter is done by pressing enter and changing the value by buttons up or down. Confirming the change of the parameter is done by pressing enter button.

Parameter range is written in brackets.

Example of parameter description in manual:


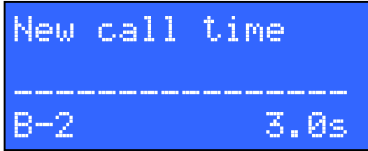
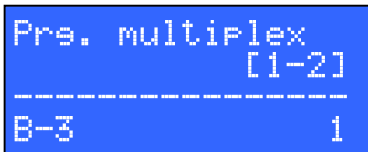


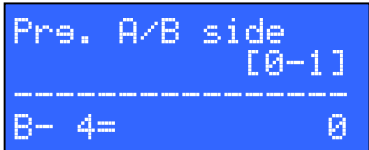





## 4.1 General - Type A

4/6 Parameters		1/12 General	Type A
A-1	Number of stops	2-40	
<div>Number of stops [2-40] ----- A- 1= 12</div>		Setting the number of floors. It is possible to set up to 40 floors.	
A-2	Number of elevators	1-8	
<div>Number of elevat [1-8] ----- A- 2= 2</div>		Number of elevators in multiplex. It is possible to set up to 8 elevators in multiplex.	
A-3	Elevator marking	A-H	
<div>Elevator marking [A-H] ----- A- 3= A</div>		Elevator marking im multiplex mode. When elevator is working in multiplex mode it is necessairly to define the elevator marking. First elevator is „A“, second is „B“ and so on. In multiplex there can't be two elevators with same marking because the communication and landing calls processing will not work correctly.	
A-4	Evacuation	0-2	
<div>Pre. evacuation [0-2] ----- A- 4= 0</div>		Parameter for choosing the type of emergency passanger evacuation. <b>0 – there is no emergency evacuation</b> <b>1 – automatic evacuation of the passangers</b> <b>2 – manual evacuation by pressing the brake open button from the cabin.</b>	
A-5	Configuration LC100	---	
<div>Confie. LC100 ----- I UFD Y SR A- 5= *</div>		Parameter to include the <a href="#">LC100-I</a> , <a href="#">LC100-VFD</a> , <a href="#">LC100-Y</a> , <a href="#">LC100-SR</a> board into system. If there exist board connected to CAN bus it needs to be included through <a href="#">A-5</a> parameter. Including is done by placing the sign „*“ under the „board“ character.	
A-6	Configuration LC100	---	
<div>Confie. LC100 ----- K K2 U U2 A- 6= *</div>		Parameter to include the <a href="#">LC100-K</a> , <a href="#">LC100-K2</a> , <a href="#">LC100-V</a> , <a href="#">LC100-V2</a> bord into system. If there exist bord connected to CAN bus it needs to be included through A-6 parameter. Including is done by placing the sign „*“ under the „board“ character.	

4/6 Parameters		1/12 General	Type A
A-7	LC100-Ex		---
<div><div>Confie. LC100-E -----           adr=01234567 A-7=       *</div><div><p>Parameter to include <b>LC100-E</b> board into the system. Including is done by placing the sign „*“ under the „board“ character. <i>(list below)</i></p><div><div>0 – LC100-E0</div><div>1 – LC100-E1</div><div>2 – LC100-E0 (FC)</div><div>3 – LC100-E0 (FD)</div><div>4 – LC100-E1 (FC)</div><div>5 – LC100-E1 (FD)</div><div>6 – LC100-K (FC)</div><div>7 – LC100-K (FD)</div></div></div></div>			
A-8	Configuration LC100		---
<div><div>Confie. LC100 -----           ADL ELG A- 8=     *</div><div><p>Parameter to include ADL inverter or ELGO absolute position system into the system.</p></div></div>			
A-9	LC100-P, L100-M, LC100-L		---
<div><div>Confie.       P/M/L -----           A    B A- 9=     *</div><div><p>Parameter to include P or M modules and choosing the function on the input pins X3:2 and X3:3 on P or M modules.</p><div><div>A – Landing call side A</div><div>B – Landing call side B</div></div></div></div> <div><p>When there is no function active (there is no P or M modules) landing calls must be set through configurations parameters.</p></div>			

## 4.2 Call processing – Type B

4/6 Parameters		2/12 Call processing	Type B
B-1	Call proces type	0-3	
		<p>Type of landing calls processing</p> <p><b>0 – One call reserved.</b> Elevator process landing call only if it is in standstill (there are no active calls, safety circuit is correct and “lift occupied” time has ended <b>B-02</b>.)</p> <p><b>1 – One way collective to main floor.</b> If the elevator has landing call and the car is driving elevator will stop for this call only if the landing call is in same direction as car travelling, and there is no „80% car load“ input active. Also the car will not stop if the elevator had passed slow down zone for the floor in wich the call is given. Else the elevator will finish the drive, and than process the landing call. Landing call in the main floor which is defined with parameter <b>B-06</b> includes both directions.</p> <p><b>2 – Full collective with two button.</b> Collective system with two buttons with functions landing call up, and landing call down. Stopping condition is the same as for „one way collective“ system.</p> <p><b>3 – Full collective with one button.</b> Same as full collective with two buttons, but the function for landing call up and down is given through one input.</p>	
B-2	Priority time for car call	0-25s	
		<p>Time for „car in use“ function when using „one call reserved“ type of call processing (Parameter <b>B-01</b>=0). During this time elevator does not accept new calls and the output function „car in use“ <b>FO-069</b> is active. Time is mesured from the end of the previous drive.</p>	
B-3	Multiplex program	1-2	
		<p>Chossing the type of call procesing in duplex elevators.</p> <p><b>1 – Standard call procesing</b></p> <p><b>2 – Program for direct calling of the „A“ elevator.</b> - If the landing call button is pressed longer than 3s elevator „A“ will process this call.</p>	



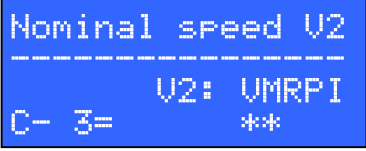
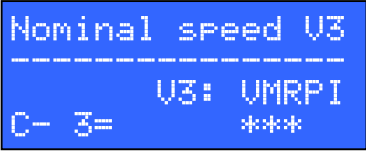

4/6 Parameters		2/12 Call processing	Type B
B-4	Program A/B side	0-1	
		<p>Program A/B side</p> <p><b>0</b> – Cabin doors are opened according to the parameters for door side (D-02 to D-11) independently to landing call side. (ex. if in the 2nd floor has two doors (A and B) landing call is always A side but elevator will open both doors</p> <p><b>1</b> - Cabin doors are opened according to the parameters for door side (D-02 to D-11) with the side control according to the landing call side (ex. if in the 2nd floor has two doors (A and B) landing call on one side is „A“, and on the other side is „B“. the elevator will open only the door on side on which the landing call is made.</p>	
B-5	Program lift-boy	0-1	
		<p>Program lift boy is the function to control elevator only with cabin commands. By pressing the landing call blinking signalization is switched on in the cabin for matching call. After that lift boy is processing the calls from the cabin.</p> <p><b>0</b> – „lift boy“ function not on</p> <p><b>1</b> – „lift boy“ function activated</p>	
B-6	Main landing floor	1-A1	
		<p>Choosing the main floor.</p> <p>In the main floor elevator with the „one way collective“ system of landing call processing (B-1=1) has the function for both direction collecting.</p>	
B-7	Fire stop zone 1	0-A1	
		<p>Defining the floor for evacuation in case of fire program 1. Fire program 1 is activated through the input with the function parameter <b>FI-210</b>.</p> <p>When the fire program is activated elevator erases all existing cabin and landing calls and switch on the cabin call to the fire stop zone 1 floor. Then elevator goes to the fire stop zone 1 floor and opens the door. If the elevator was driving when fire program was activated it will end current drive and then go to fire stop floor.</p>	
B-8	Fire stop zone 2	0-A1	
		<p>Defining the floor for evacuation in case of fire program 2. Fire program 2 is activated through the input with the function parameter <b>FI-211</b>.</p> <p>Fire program 2 has lower priority than fire program 1.</p>	
B-9	Fire stop zone 3	0-A1	
		<p>Defining the floor for evacuation in case of fire program 3. Fire program 3 is activated through the input with the function parameter <b>FI-212</b>.</p> <p>Fire program 3 has lower priority than fire program 2 and 1</p>	

4/6 Parameters		2/12 Call processing	Type B
B-10	Fire stop zone 4	0-A1	
<pre> Fire stop zone 4      [1-A1] ----- B-10=      1           </pre>		Defining the floor for evacuation in case of fire program 3. Fire program 3 is activated through the input with the function parameter <b>FI-212</b> . Fire program 4 has lower priority than fire programs 3, 2 and 1.	
B-11	False calls erasing	0-8	
<pre> False calls erasing     [0-8] ----- B-11=      0           </pre>		Erasing the false cabin calls: <b>0 – Erasing the calls is disabled</b> <b>1 – Erasing the calls after first call</b> <b>2 – Erasing the calls after second call</b> <b>3 – Erasing the calls after third call</b> <b>4 – Erasing the calls after fourth call</b> <b>5 – Erasing the calls after fifth call</b> <b>6 – Erasing the calls after sixth call</b> <b>7 – Erasing the calls after seventh call</b> <b>8 – Erasing the calls after eighth call</b>  False call erasing: if there are many cabin calls, when the elevator stops at the floor and the landing doors are not opened or there is no passing through photocell this is called false call.	
B-12	Parking program	1-2	
<pre> Type Program Parkine     [1-2] ----- B-12=      1           </pre>		Choosing the parking type program. 1. MASTER elevator decides which elevator is going to park. Parking stop set on the master elevator is active for parking. In the parking stop there is one elevator which is parked and proces only landing calls from that stop and exits from the parking floor if there is more landing calls than free elevators in multiplex. 2. Every elevator parks to it's parking floor after time set in parameters <b>B-14</b> or <b>B-16</b> expires. Elevator in parking stop is procesing landing calls according to the program of landing calls.	
B-13	Parking stop 1	0-A1	
<pre> Parkine stop 1 PARK 1      [0-A1] ----- B- 13=      1           </pre>		Setting the parking stop 1.  <b>0 – Not activated</b> – parking program is not active. <b>1-A1 – Parking floor.</b> After the time set in the parameter <b>B-14</b> expires elevator goes to parking stop.	
B-14	Time for parking 1	0-41min 40s	
<pre> Time      Park 1           min:sec ----- B-14=      5:00           </pre>		Time for parking for parking zone 1.	





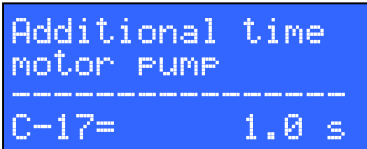
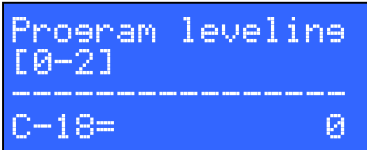
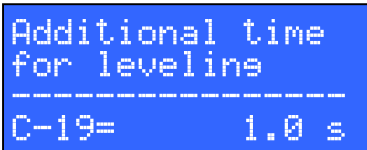
4/6 Parameters		2/12 Call processing	Type B
B-15	Parking stop 2	0-A1	
<pre> Parking stop 2 PARK2      [0-A1] ----- B- 15=          1 </pre>		<p>Setting the parking stop 2.</p> <p><b>0 – Not activated</b> – parking program is not active.  <b>1-A1 – Parking floor.</b>  After the time set in the parameter <b>B-16</b> expires elevator goes to parking stop.</p>	
B-16	Time for parking 2	0-41min 40s	
<pre> Time      park 2           min:sec ----- B-16=          5:00 </pre>		<p>Time for parking for parking zone 2.</p>	
B-17	Landing call disable	0-41min 40s	
<pre> Disable calls (F296=1) [0-232] ----- B-17=          0A </pre>		<p>Parameter is used to disable landing and cabin calls. Function for disabling the calls is on the input with function <b>FI-296</b>.  Parameter B-17 is used to define the condition for calls disabling. How to set the B-17 parameter is explained in „<b>configuring disable calls</b>“ manual.</p>	
B-18	Cancel cabine Calls	0-1	
<pre> Cancel cabine Calls      [0-1] ----- B-18=          1 </pre>		<p>Parameter is used to enable/disable cancel cabine calls.</p> <p>If is enabled, when you press cabin call and you want cancel cabin call just need press against the same cabin call and it will be canceled and elevator will stop in first nearest station.</p>	

## 4.3 Main drive - Type C

4/6 Parameters		3/12 Main drive	Type C
C-1	Main drive type	1-4	
		<p>Parameter is used for defining the main drive type.</p> <p><b>1 –Not regulated AC1</b> – One speed elevator. When the drive is one speed not regulated than also parameter <b>E-01</b> must be set to 1. Also parameter <b>C-15</b> must be set to 1.</p> <p><b>2 – Not regulated AC2</b> – Two speed not regulated elevator.</p> <p><b>3 – Regulated VVVF</b> – Frequency regulated elevator.</p> <p><b>4 – Hydraulic HID</b> – Hydraulic elevator.</p>	
C-2	Nominal speed V1	---	
		<p>Parameter is used to set speed encoding for nominal speed V1. Parameter is available only for frequency regulated elevators (<b>C-01=3</b>). Sign „*“ under a specific letter means that in nominal speed board activates the outputs with the belonging parameter</p> <p>Meaning of the letters:</p> <p><b>V</b> – Output on which „high speed“ function is set <b>FO-004</b>.</p> <p><b>M</b> – Output on which „low speed“ function is set <b>FO-003</b>.</p> <p><b>R</b> – Output on which „inspection speed“ is set <b>FO-005</b>.</p> <p><b>P</b> – Output on which „relevelling speed“ is set <b>FO-006</b>.</p> <p><b>I</b> – Output on which „intermediate speed“ is set <b>FO-007</b>.</p>	
C-3	Nominal speed V2	---	
		<p>Parameter is used to set speed encoding for nominal speed V2. Parameter is available only for frequency regulated elevators (<b>C-01=3</b>). Sign „*“ under a specific letter means that in nominal speed board activates the outputs with the belonging parameter.</p> <p>Meaning of the letters is explained in parameter <b>C-2</b>.</p>	
C-4	Nominal speed V3	---	
		<p>Parameter is used to set speed encoding for nominal speed V3. Parameter is available only for frequency regulated elevators (<b>C-01=3</b>). Sign „*“ under a specific letter means that in nominal speed board activates the outputs with the belonging parameter.</p> <p>Meaning of the letters is explained in parameter <b>C-2</b>.</p>	
C-5	Stopping speed	---	
		<p>Parameter is used to set speed encoding for stopping speed (levelling speed). Parameter is available only for frequency regulated elevators (<b>C-1=3</b>). Sign „*“ under a specific letter means that in stopping speed board activates the outputs with the belonging parameter.</p> <p>Meaning of the letters is explained in parameter <b>C-2</b>.</p>	

4/6 Parameters		3/12 Main drive	Type C
C-6	Leveling speed	---	
<div>Leveling speed. ----- UP: UMRPI C- 6=       * *</div>		<p>Parameter is used to set speed encoding for releveling speed. Parameter is available only for frequency regulated elevators (C-01=3). Sign „*“ under a specific letter means that in releveling speed board activates the outputs with the belonging parameter.</p> <p>Meaning of the letters is explained in parameter C-2.</p>	
C-7	Inspection speed 1	---	
<div>Service speed 1 ----- UR1: UMRPI C- 7=       * *</div>		<p>Parameter is used to set speed encoding for inspection speed 1. Parameter is available only for frequency regulated elevators (C-01=3). Sign „*“ under a specific letter means that in intermediate speed board activates the outputs with the belonging parameter.</p> <p>Meaning of the letters is explained in parameter C-2.</p>	
<p>Example for encoding the nominal speed and inspection speed.</p> <p>On the diagram there is a example for speed encoding for frequency regulated elevator. In the start the speed encoding is for nominal speed C-03 (active is output for nominal speed FO-004 and output for low speed FO00-3). When slowing down elevator switches to levelling speed C-04 (output for nominal speed is switched off FO-004, and output for slow speed FO-003 stays on).</p> <p>When driving with the service speed elevator switches on the outputs defined through parameter C-05 (output for inspection speed FO-005).</p> <p>Example on the diagram is only informative, it is shown based on the example of parameters in this manual. Real encoding for the speeds depends on type of frequency regulator and wiring of the cabinet.</p>			

4/6 Parameters		3/12 Main drive	Type C
C-8	Inspection speed 2	0-2,5s	
<pre>Service speed 2 ----- UR2: UMRPI C- 8=      *  *</pre>		<p>Parameter is used to set speed encoding for inspection speed 1. Parameter is available only for frequency regulated elevators (C-01=3). Sign „*“ under a specific letter means that in intermediate speed board activates the outputs with the belonging parameter.</p> <p>Meaning of the letters is explained in parameter C-2.</p>	
C-9	Delay time for switching off the motor contactors	0-25s	
<pre>Time OFF motor contactors ----- C- 9=      1.5 s</pre>		<p>Delay for switching of the motor contactors (function FO-001 or FO-002) from the moment when stopping comand is given (when elevator reaches the stopping switch FI-256 or FI-257).</p>	
C-10	Time for switching on the brake contactors	0-2,5s	
<pre>Time ON brake contactor ----- C-10=      1.5 s</pre>		<p>Delay time for switching on the brake contactors (function FO-011) from the moment start command is given (function FO-001 or FO-002).</p>	
C-11	Delay time for switching off the brake contactor	0-2,5s	
<pre>Time OFF brake contactor ----- C-11=      1.5 s</pre>		<p>Delay time for switching off the brake contactor (function FO-011) from the moment stopping command is given (when elevator reaches the stopping switch FI-256 or FI-257).</p>	
C-12	Time for brake holding voltage	0-25s	
<pre>Time low brake voltage ----- C-12=      1.0 s</pre>		<p>Time for low brake voltage. Function for brake holding voltage, FO-12 is switched on parallel with function for the brake FO-11 and is on during time defined with parameter C-12.</p>	
C-13	Working time for main drive fan	0-250s	
<pre>Workins time main drive fun ----- C-13=      30.0 s</pre>		<p>Working time for main drive fan FO-18. Function for fan FO-18 is switched on when bimetal input signal is switched on FI-208, and it is on during time defined with parameter C-13.</p>	
C-14	Starting time for motor pump	0-25s	
<pre>Startine time motor PUMP ----- C-14=      2.5 s</pre>		<p>Starting time for motor pump for hydraulics elevators C-01=4. It defines time for function „start pump“ FO-13.</p>	






4/6 Parameters		3/12 Main drive	Type C
C-15	Service speed		0-1
		<p>Setting the command for service speed.</p> <p><b>0</b> – Service speed is done with <b>low</b> speed ( function <b>FO-03</b>)</p> <p><b>1</b> – Service speed is done with <b>high</b> speed ( function <b>FO-04</b>)</p> <p>Parameter is active only for <b>C-01=2</b> or <b>4</b>, while for one speed elevators it must be set to „1“ <b>C-01=1</b>.</p> <p>For frequency regulated elevators <b>C-01=3</b> parameter is not valid because service speed is encoded through parameter <b>C-05</b>.</p>	
C-16	Time for valve UP function		0-2,5s
		<p>Parameter is used for hydraulics elevators. Functions <b>FO-14</b> and <b>FO-15</b> are switched on with delay C-16 after checking that all elements for drive up are switched on.</p>	
C-17	Additional time for motor pump		0-2,5s
		<p>Additional working time for pump for hydraulics elevators <b>C-01=4</b>.</p> <p>When elevator reaches the stopping switch outputs for powering the valves are switched off (<b>FO-14</b> i <b>FO-15</b>). Output for controlling the motor (<b>FO-1</b>) is on for this additional time.</p>	
C-18	Relevelling		0-2
		<p>Defining the relevelling program.</p> <p><b>0</b> – Relevelling is not active.</p> <p><b>1</b> – Relevelling is done only with closed doors.</p> <p><b>2</b> – Relevelling is done wit open or closed doors.</p> <p>When elevator in normal drive exits the floor levell, if relevelling function is on drive gives command for returning to the floor level.</p> <p>If the cabin has lowered down – output for stopping in direction up <b>FI-256</b> is switched off. Conditions for relevelling is that elevator is still on the other stopping switch (active input <b>FI-257</b>) and zone switch is active (active input <b>FI-258</b>). In that case drive switch on the rellevelling enable output <b>FO-21</b> which then activates the safety device for relevelling. If the safety device is correct (control on the input with function <b>FI-205</b>) drive switches relevelling in up direction. Relevelling is done with low speed for drive types <b>C-01=2</b> or <b>4</b>, while for <b>C-01=3</b> relevelling is done with encoded speed defined by parameter <b>C-06</b>.</p> <p>If the cabin has lowered down – output for stopping in direction down <b>FI-257</b> is switched off. Conditions for relevelling is that elevator is still on the other stopping switch (active input <b>FI-256</b>) and zone switch is active (active input <b>FI-258</b>). In that case drive switch on the rellevelling enable output <b>FO-21</b> which then activates the safety device for relevelling. If the safety device is correct (control on the input with function <b>FI-205</b>) drive switches relevelling in down direction. Relevelling is done with low speed for drive types <b>C-01=2</b> or <b>4</b>, while for <b>C-01=3</b> relevelling is done with encoded speed defined by parameter <b>C-06</b>..</p>	
C-19	Additional relevelling time		0-2,5s
		<p>Additional time for relevelling.</p> <p>In the normal drive elevator approaches to stopping magnet in slow speed, after comand for stopping because of inertion there is some distance from command to complete stop in the floor levell. While relevelling this inercion is lower so the car sometimes will not reach the floor levell. In that case additional relevelling time is needed for car to reach the floor level.</p>	

4/6 Parameters		3/12 Main drive	Type C
C-20	Open brake time on evacuation	0-2,5s	
<div>Open brake time on evacuation ----- C-20= 0.30s</div>		Parameter is used for setting the „on“ time of output function FO-36.	
C-21	Close brake time on evacuation	0-2,5s	
<div>Close brake time on evacuation ----- C-21= 0.30s</div>		Parameter is used for setting the „on“ time of output function FO-36.	



## 4.4 Doors - Type D

4/6 Parameters		4/12 Door	Type D
D-1	Cabin door		0-2
<div> <div>Type of car door ----- [0-2] ----- D- 1= 1</div> <div> <p>Cabin door type selection:</p> <p><b>0- No door</b> or manual door</p> <p><b>1- One automatic</b> cabin door</p> <p><b>2- Two automatic</b> cabine doors</p> <p>In the case of two cabin doors, door opening in the stations must be defined over the parameters <b>D-02</b> to <b>D-11</b>.</p> </div> </div>			
D-2	A-side door for stations 1 to 8		---
<div> <div>Door A side ----- [ 1- 8]:12345678 D- 2= ***</div> <div> <p>A-side door opening selection in case of two cabin doors (<b>D-01=2</b>).</p> <p>Parameter D-02 select door opening in the stations 1 to 8.</p> <p>Example shows door opening in the stations 1, 2 and 3.</p> </div> </div>			
D-3	A-side door for stations 9 to 19		---
<div> <div>Door A side ----- [ 9-16]:90123456 D- 3= ***</div> <div> <p>A-side door opening selection in case of two cabin doors (<b>D-01=2</b>).</p> <p>Parameter D-03 select door opening in the stations 9 to 16.</p> <p>Example shows door opening in the stations 14, 15 and 16.</p> </div> </div>			
D-4, D-5, D-6	A-side door		---
<p><b>D-4</b> - same as D-3 but for the stations 17 to 24</p> <p><b>D-5</b> - same as D-3 but for the stations 15 to 32</p> <p><b>D-6</b> - same as D-3 but for the stations 33 to 40</p>			
D-7	B-side door for stations 1 to 8		---
<div> <div>Door B side ----- [ 1- 8]:12345678 D- 7= ***</div> <div> <p>B-side door opening selection in case of two cabin doors (<b>D-01=2</b>).</p> <p>Parameter D-07 select door opening in the stations 1 to 8.</p> <p>Example shows door opening in the stations 3, 4 and 5.</p> </div> </div>			
D-8	B-side door for stations 9 to 16		---
<div> <div>Door B side ----- [ 9-16]:90123456 D- 8= ***</div> <div> <p>B-side door opening selection in case of two cabin doors (<b>D-1=2</b>).</p> <p>Parameter D-08 select door opening in the stations 9 to 16.</p> <p>Example shows door opening in the stations 14, 15 and 16.</p> </div> </div>			
D-9, D-10, D-11	B-side door		
<p><b>D-9</b> - same as D-8 but for the stations 17 to 24</p> <p><b>D-10</b> - same as D-8 but for the stations 15 to 32</p> <p><b>D-11</b> - same as D-8 but for the stations 33 to 40</p>			

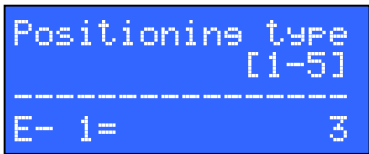
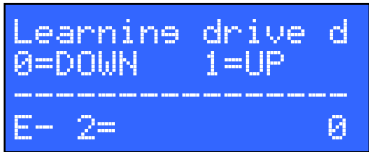

4/6 Parameters		4/12 Door	Type D
D-12	A-side door orders	---	
		Voltage holding definition (command open or close active) for cabin door at A-side. <b>A – Close</b> door output <b>FO-41</b> is active <b>during travel</b> . <b>B – Open</b> door output <b>FO-40</b> is active <b>during passanger passing time</b> . <b>C – Close</b> door output <b>FO-41</b> is active when the <b>door is closed</b> .  <b>D – Close</b> door output <b>FO-41</b> is active <b>during inspection travel</b> <b>FI-235</b> or feedback control <b>FI-201</b> except while open door order is active. <b>E – Close</b> door output <b>FO-41</b> is active <b>during normal travel when elevator is not in the station</b> (active input <b>FI-256</b> or <b>FI-257</b> ), <b>except while open door order is active..</b> <b>F – Includes</b> door manipulation over the feedback control (applies to the door B).	
D-13	A-side door opening time	0-25s	
		Door A opening time defining. It is used in case of no door end-switches ( <b>FI-260</b> and <b>FI-261</b> ) or as maximum door manipulation time during inspection travel.	
D-14	A-side landing door type	0-3	
		A-side landing door type: <b>0 – Semi-automatic or manual door</b> with mechanical locking. <b>1 – Automatic door</b> with mechanical locking. <b>2 – Semi-automatic or manual door</b> with electrical locking <b>3 – Automatic door</b> with electrical locking.	
D-15	A-side automatic door open in stations 1 to 8	---	
		Defining stations in which elevator waiting with door A open. For stations 1 to 8. Parameter has function with automatic landing door A <b>D-14=1</b> or <b>3</b> . Symbol „*“ below the number means that elevator waits in that station with door open. Example shows that elevator in standby in stations 1, 2 and 3 waiting with door open. In other stations keeps door closed.	
D-16	A-side automatic door open in stations 9 to 16	---	
		Defining stations in which elevator waiting with door A open. For stations 9 to 16. Parameter has function with automatic landing door A <b>D-14=1</b> or <b>3</b> . Symbol „*“ below the number means that elevator waits in that station with door open. Example shows that elevator in standby in stations 14, 15 and 16 waiting with door open. In other stations keeps door closed.	

4/6 Parameters	4/12 Door	Type D
D-17, D-18, D-19	Door A open	---
<b>D-17</b> - same as D-16 but for stations 17 to 24 <b>D-18</b> - same as D-16 but for stations 15 to 32 <b>D-19</b> - same as D-16 but for stations 33 to 40		
D-20	B-side door orders	0-7
<div> <div> Orders door B  -----  ABCDEF  D-20= ** * * </div> <div> <p>Voltage holding definition definition (command open or close active) for cabin door at B-side.</p> <p><b>A</b> – Close door output <b>FO-45</b> is active <b>during travel</b>.</p> <p><b>B</b> – Open door output <b>FO-44</b> is active <b>during passenger passing time</b>.</p> <p><b>C</b> – Close door output <b>FO-45</b> is active when the <b>door is closed</b>.</p> <p><b>D</b> – Close door output <b>FO-45</b> is active <b>during inspection travel FI-235</b> or feedback control <b>FI-201</b> except while open door order is active.</p> <p><b>E</b> – Close door output <b>FO-45</b> is active <b>during normal travel when elevator is not in the station</b> (active input <b>FI-256</b> or <b>FI-257</b>), <b>except while open door order is active</b>.</p> <p><b>F</b> – Includes door manipulation over the feedback control (applies to the door B).</p> </div> </div>		
D-21	B-side door opening time	0-25s
<div> <div> Opening time  door B  -----  D-21= 4.0s </div> <div> <p>Door A opening time defining.</p> <p>It is used in case of no door end-switches (<b>FI-270</b> and <b>FI-271</b>) or as maximum door manipulation time during inspection travel.</p> </div> </div>		
D-22	B-side landing door type	0-3
<div> <div> Type of landing  door B [0-3]  -----  D-22= 0 </div> <div> <p>B-side landing door type:</p> <p><b>0</b> – Semi-automatic or manual door with mechanical locking.</p> <p><b>1</b> – Automatic door with mechanical locking.</p> <p><b>2</b> – Semi-automatic or manual door with electrical locking</p> <p><b>3</b> – Automatic door with electrical locking.</p> </div> </div>		
D-23	B-side automatic door open in stations 1 to 8	---
<div> <div> Open door B stop  -----  [ 1- 8]:12345678  D-23= *** </div> <div> <p>Defining stations in which elevator waiting with door B open. For stations 1 to 8. Parameter has function with automatic landing door B <b>D-22=1</b> or <b>3</b>.</p> <p>Symbol „*“ below the number means that elevator waits in that station with door open.</p> <p>Example shows that elevator in standby in stations 1, 2 and 3 waiting with door open. In other stations keeps door closed.</p> </div> </div>		

4/6 Parameters		4/12 Door	Type D
D-24	B-side automatic door open in stations 9 to 16		---
<div>Open door B stop ----- [ 9-16]:90123456 D-24=***</div>		<p>Defining stations in which elevator waiting with door B open. For stations 9 to 16. Parameter has function with automatic landing door B <b>D-14</b>=1 or 3.</p> <p>Symbol „*“below the number means that elevator waits in that station with door open.</p> <p>Example shows that elevator in standby in stations 14, 15 and 16 waiting with door open. In other stations keeps door closed.</p>	
D-25, D-26, D-27	Door B open		---
<p><b>D-25</b> - same as D-24 but for stations 17 to 24</p> <p><b>D-26</b> - same as D-24 but for stations 15 to 32</p> <p><b>D-27</b> - same as D-24 but for stations 33 to 40</p>			
D-28	Preopening		0-1
<div>Preopening door [0-1] ----- D-28=0</div>		<p>Door preopening:</p> <p><b>0</b> – Door preopening <b>off</b>.</p> <p><b>1</b> – Door preopening <b>on</b>.</p>	
D-29	Preopening delay		0-2,5s
<div>Delay for start preopening door ----- D-29=1.0s</div>		<p>Door open delay time in preopening mode.</p>	
D-30	Passenger passing time		0-25s
<div>Standard exit time at stop ----- D-30=2.0s</div>		<p>Door open time when elevator comes to the station.</p>	
D-31	Passenger passing time after photocell		0-25s
<div>Waiting time after photocell ----- D-31=2.0s</div>		<p>Passenger passing time after photocell input is activated or landing door opening if not automatic.</p> <p>Interrupting <b>FI-263</b> or <b>FI-273</b> open door time is set by parameter.</p>	

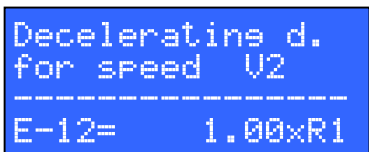
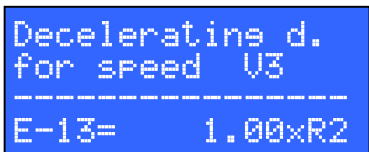

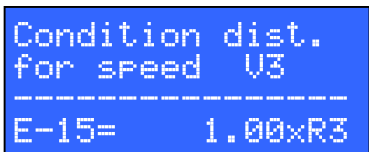
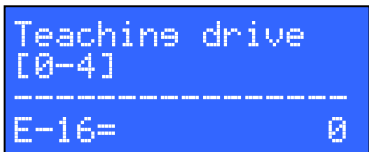
4/6 Parameters		4/12 Door	Type D
D-32	Passenger passing time after cabin call	0-25s	
<pre> Waiting time after new call ----- D-32=      2.0s           </pre>		Passenger passing time after new cabin call while in station. By giving new cabin command passenger passing time is set by parameter.	
D-33	Door deceleration time	0-25s	
<pre> Door decelerat. time ----- D-33=      2.0s           </pre>		Parameter is used to activate input function <b>FO-42</b> (for A door) or <b>FO-46</b> (for B door) with doors with no before end-switches. Parameter estimates the time of opening or closing the door and activates a low speed depending on the parameter.	
D-34	Door reversing time	0-2,5s	
<pre> Door reversing time ----- D-34=      1.0s           </pre>		Parameter is time with no active commands for open and close door while reversing.	
D-35	Door resistors time	0-25s	
<pre> Door resistors time ----- D-35=      1.0s           </pre>		The parameter is the time of the resistors to reduce the mechanical strain of the door if resistor function is in use <b>FO-43</b> for A-side door, <b>FO-47</b> for B-side door.	
D-36	Door locking time	0-2,5s	
<pre> Door lockine time ----- D-36=      2.0s           </pre>		After door lock activating, system filtrates input for stabilizing door lock contact and starts traveling after filter set by parameter. The parameter is used to prevent safety circuit break after start command.	

## 4.5 Positioning - Type E

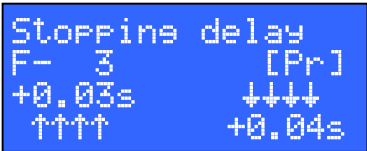
4/6 Parameters	5/12 Positioning	Type E
E-01	Positioning type	1-5
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 2;"> <p>Choosing the positioning type:</p> <p><b>1 – Positioning type for one speed elevator.</b> For positioning type 1 referent switches are used and stopping switch is used. Elevator is driving with one speed, floors are counted when passing through stop switch according to the driving direction.</p> <p><b>2 – Positioning type with two switches for counting.</b> There are also two referent switches and stopping switch. Elevator counts the floors +1 when passing counting up switch and -1 when passing by the counting down switch. Counting switches are also the slowing down point for the middle floors while for the end floors slowing down point is the referent switch.</p> <p><b>3 – Positioning type with bistable counting switch.</b> There are also two referent switches and stopping switch. Elevator counts the floors when passing by counting switch according to the travelling direction. Counting switch is also the slowing down point for the middle floors while for the end floors slowing down point is the referent switch.</p> <p><b>4 – Positioning type with inductive switch.</b> There are also two referent switches and stopping switch. Elevator counts the floors according to the traveling direction and the number of the impulses. Slowing down point for the final floors are referent switches while for middle floors slowing down point is the same impulse numbers as for the final floors. When using frequency regulator on CAN bus impulses are taken from the motor encoder.</p> <p><b>5 – Positioning type with inductive switch and two nominal speeds.</b> There are also two referent switches for nominal speed, two referent switches for lower speed and stopping switch. First drive elevator goes with the lower speed <b>C-07</b> and slows down while passing the lower referent switch <b>FI-251</b> or <b>FI-253</b>. Driving between two next floors is always done with lower speed <b>C-07</b>. Driving two or more floor distances elevator is driving with nominal speed <b>C-03</b>.</p> <p>If the relevelling (<b>C-18=1</b> or <b>2</b>) or preopening the doors (<b>D-28=1</b>) is activated then there are two stopping switches: stopping UP (<b>FI-256</b>) and stopping DOWN (<b>FI-257</b>), and one switch for door zone (<b>FI-258</b>).</p> <p>If there is no relevelling or preopening the doors activated one stopping switch is used. It is connected to input with function stopping UP (<b>FI-256</b>) and it is used for stopping in both direction.</p> <p>Connecting the positioning switches and magnets position in the shaft is explained in appendix <b>POSITIONING</b>.</p> </div> </div>		
E-02	Learning drive direction	0/1
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 2;"> <p>Choosing the direction for the learning drive. It is possible to choose direction for the positioning type <b>E-01=1, 2</b> i <b>3</b>. While when using positioning type <b>4</b> or <b>5</b> parameter is not in use.</p> <p><b>0</b> – Learning drive is in direction UP</p> <p><b>1</b> – Learning drive is in direction DOWN.</p> </div> </div>		
E-03	Decelerating zone correction [imp]	0-250imp
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 2;"> <p>Parameter is active when using positioning type <b>E-01=5</b> if there are no referent switches inputs defined (functions <b>FI-251</b> and <b>FI-253</b>). Decelerating zone for nominal speed is defined as a sum of impulses for lower speed zone and this parameter. When using this positioning type <b>5</b> subtype choosing the speed for the drive is calculated with the floor to floor distance and decelerating zone calculated by measurement and this parameter. This way it is possible that the one floor distance is driven by lower or the nominal speed.</p> </div> </div>		




4/6 Parameters		5/12 Positioning	Type E
E-04	Preopening speed [imp/s]		0-100imp
<div>Preopening speed [imp/sec] ----- E- 4= 0</div>		<p>Parameter is used as a speed control for preopening the doors. Speed is measured by the number of impulses on the inductive switch (positioning type E-01=4 or 5). If the speed is lower than one defined in the parameter E-04 then output with the „preopening enabled“ function FO-21 is switched on.</p>	
E-05	Stopping delay in direction UP		0-2,5s
<div>Stopping delay in UP drive ----- E- 5= 0.5s</div>		<p>Parameter for stopping delay when driving up. When elevator reaches the stopping magnet drive command is switched off and elevator stops. With this parameter it is possible to extend the driving time after reaching the stopping switch.</p> <p>Parameter is used for leveling adjustment and it is active for all floors.</p> <p>Leveling adjustment for each floor by itself is done by parameters for stopping F-XX.</p>	
E-06	Stopping delay in direction DOWN		0-2,5s
<div>Stopping delay in down drive ----- E- 6= 0.2s</div>		<p>Parameter for stopping delay when driving down. When elevator reaches the stopping magnet drive command is switched off and elevator stops. With this parameter it is possible to extend the driving time after reaching the stopping switch.</p> <p>Parameter is used for leveling adjustment and it is active for all floors.</p> <p>Leveling adjustment for each floor by itself is done by parameters for stopping F-XX.</p>	
E-07	Short floor distance 1-8		---
<div>Short floor dist [ 1- 8]:12345678 E- 7= ** 23456789</div>		<p>Parameter for defining short floor distances for floors 1 to 8.</p> <p>Short floor means that the distance between two floors is shorter than the deceleration distance.</p> <p>Setting the short floors is done by putting the „*“ sign between the floors wich have the short distance.</p> <p>Between the floors that are set elevator is driving with slow speed.</p> <p>On the example between the 3th and 4th floor and between 4th and 5th floor elevator will drive in slow speed.</p>	
E-08	Short floor distance 9-16		---
<div>Short floor dist [ 9-16]:90123456 E- 8= * * 01234567</div>		<p>Parameter for defining short floor distances for floors 9 to 16.</p> <p>Short floor means that the distance between two floors is shorter than the deceleration distance.</p> <p>Setting the short floors is done by putting the „*“ sign between the floors wich have the short distance.</p> <p>Between the floors that are set elevator is driving with slow speed.</p> <p>On the example between the 12th and 13th floor and between 15th and 16th floor elevator will drive in slow speed.</p>	
E-09,E-10,E-11		Short floor distance	---
<p>E-09 - same as E-08 but for floors 17 to 24</p> <p>E-10 - same as E-08 but for floors 15 to 32</p> <p>E-11 - same as E-08 but for floors 33 to 40</p>			

4/6 Parametri		5/12 Kopiranje	Tip E
E-12	Decelerating distance for speed V2 [imp]	1.00-3.00	
		<p>Parameter is used for positioning type 5. E-12 represent the decelerating zone for V2. If there is an input for second referent switch <b>FI-251</b> and <b>FI-253</b> then the zone is defined by the input. If the inputs are not defined then decelerating zone can be calculated as multiplier of zone for V1</p> <p>R1 – is deceleration distance for V1.  <b>E-12</b> – represent R2 (deceleration distance for V2)</p> <p>I.e. Decelerating zone for V1 is 1m (I.e 1000imp) where speed V1=1m/s.          If there is need to set additional speed V2=1,6m/s with deceleration distance 2,5m <b>E-12</b> will be set to <b>E-12=2.5xR1</b>. Then deceleration zone for V2 is set to 2,5m (2500imp). Assumption is that 1mm=1imp Which can be diferent in real situation.</p>	
E-13	Decelerating distance for speed V3 [imp]	1.00-3.00	
		<p>Parameter is used for positioning type 5. E-13 represent the decelerating zone for V3. Parameter is used to define deceleration distance for V3 as a multiplier of zone for V2</p> <p>R2 – is deceleration distance for V2 (parameter E-12).  <b>E-13</b> – represent R3 (deceleration distance for V3)</p> <p>I.e. Decelerating zone for V2 (<b>E-12</b>) is 2,5m (I.e 2500imp) where speed V2=1,6m/s.          If there is need to set additional speed V3=2m/s with deceleration distance 5m <b>E-13</b> will be set to <b>E-13=2.00xR2</b>. Then deceleration zone for V3 is set to 5m (5000imp). Assumption is that 1mm=1imp Which can be diferent in real situation.</p>	
E-14	Condition distance for V2 [imp]	1.00-3.00	
		<p>Parameter is used to determine drive speed. When drive command is given elevator will start with the speed V2 if condition <b>E-14</b> is satisfied.</p> <p>R2 – presents deceleration distance for V2 (parameter <b>E-12</b>).          I.e. We want to drive with the speed V2 (1,6m/s) if the driving distance is more than 6m. <b>E-12</b> is set to 2,5m (2500imp), than we must set the <b>E-14</b> to <b>E-14=2.4xR2</b> which means 6m (6000imp).</p> <p>If the drive distance is more than <b>E-14</b> (6m) the elevator will drive with the speed V2 otherwise it will start with V1.</p>	
E-15	Uvjet za izbor vožnje brzinom V3 [imp]	1.00-3.00	
		<p>Parameter is used to determine drive speed. When drive command is given elevator will start with the speed V3 if condition <b>E-15</b> is satisfied.</p> <p>R3 – presents deceleration distance for V3 (parameter <b>E-13</b>).          I.e. We want to drive with the speed V3 (2,5m/s) if the driving distance is more than 12m. <b>E-13</b> is set to 5m (5000imp), than we must set the <b>E-15</b> to <b>E-15=2.4xR3</b> which means 12m (12000imp).</p> <p>If the drive distance is more than <b>E-15</b> (12m) the elevator will drive with the speed V3 otherwise it will check conditions for speed V2 (parameter <b>E-14</b>)</p>	
E-16	Learning travel	0-4	
		<p>Parameter is used to activate the learning travel when using positioning type <b>E-01= 4</b> ili 5.</p> <p>When all Positioning elements are set and parameters E-12 to E-14, if used, learning drive must be done.</p> <p>To do a learning travel parameter E-16 must be set to „0“, after that parameter change the value as follows:</p> <ul style="list-style-type: none"> <li>0 – Learning drive command is given.</li> <li>1 – Learning drive in progres.</li> <li>2 – Calculating the results</li> <li>3 – Learning travel done</li> <li>4 – Not used</li> </ul>	

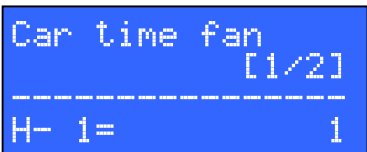
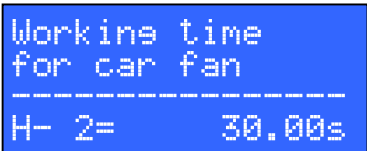
## 4.6 Stopping - Type F

4/6 Parameters	6/12 Stopping	Type F
F-xx	Stopping delay for x floor	0-2,55s
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 2;"> <p>Parameter for setting the levelling adjustment. Parameter F-01 is setting for 1th floor, F-02 for 2nd ... In bracket the floor marking is shown which is set through parameters G-XX.</p> <p>It is possible to set delay for each floor from up and down direction. Parameter is set in seconds and represents stopping delay from reaching the stopping magnet.</p> </div> </div>		

## 4.7 Lift markings - Type G

4/6 Parameters	7/12 Lift markings	Type G
G-xx	Marking for the lift on display on M boards	---
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 2;"> <p>Parameters for setting the lift markings. Lift marking is displayed on LC100-M landing call boards.</p> <p>Parameter G-00 is marking for the unknown car position G-01 is marking for the first floor, G-02 for second...</p> <p>In order to LC100-M board showing the floor marking it is needed to set PML parameters ( put „*“ sign under the letter „A“ for floors in which is the LC100-M board).</p> </div> </div>		

## 4.8 Timers - Type H

4/6 Parameters	8/12 Timers	Type H
H-01	Type of car fan control	1-2
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 2;"> <p>Parameter for setting the car fan control type.</p> <p>1 – Car fan (function FO-50) is switched on after the input car fan is triggered (FA-561) and is switched on time set in parameter H-02.</p> <p>2 – Car fan (FO-50) is switched on automaticly every time that car is driving and is switched off after car has stopped and time H-02 has expired.</p> </div> </div>		
H-02	Working time for car fan	0-250s
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 2;"> <p>Parameter for setting the working time for car fan.</p> </div> </div>		

4/6 Parameters		8/12 Timers	Type H
H-03	Car light control type	1-2	
<div>Car light type ----- [1/2] ----- H- 3= 1</div>		<p>Car light control type selection.</p> <p><b>1 – Standard</b> – Function for controlling the cabin light FO-51 is switched off after time set in H-04 expired.</p> <p><b>2 – Reserved.</b></p>	
H-04	Working time for the car light	0-250s	
<div>Working time for car light ----- H- 4= 30.00s</div>		<p>Parameter for setting the working time for car light. After all conditions for powering the light off are made this time must expire before switching the power off.</p>	
H-05	OFF time for shaft light	0-250s	
<div>OFF time for shaft light ----- H- 5= 5.00s</div>		<p>Parameter for setting the time to power off the shaft light. The shaft light is switched on automatically when inspection input is activated (FI-235), and it is switched off after putting to normal drive and this time has expired.</p>	
H-06	Programable relay T1	---	
<div>Prog. relay T1 ----- H- 6= impuls_1 TIME=00:00:00.00</div>		<p>Parameter for setting the time relay T1 . It is possible to set 3 type of time relays:</p> <ol style="list-style-type: none"><li><b>BISTABIL</b> Output function FO-33 changes every time on positive puls on input function FI-216.</li><li><b>IMPULS</b> Output function FO-33 switches of after time set in this parameter after positive puls on input function FI-216.</li><li><b>DELAY</b> Output function FO-33 is activated after time set in this parameter after positive puls on input function FI-216.</li></ol>	
<p>Time settings: „TIME=aa:bb:cc.dd“, - „aa“-hours, „bb“ minutes, „cc“ seconds, „dd“milliseconds“</p>			
<div><div>BISTABIL</div><div><div>FI-216, 217</div><div>FO-33, 34</div></div></div> <div><div>IMPULS</div><div><div>FI-216, 217</div><div>FO-33, 34</div></div></div> <div><div>DELAY</div><div><div>FI-216, 217</div><div>FO-33, 34</div></div></div> <div><div>ACTIVE STATE INPUT OR OUTPUT</div></div>			
H-08	Programable relay T2	---	
<p>Parameter for setting the programabile relay T2. Setting is the same as for T1, parameter H06. Input function FI-217, output function FO-34.</p>			

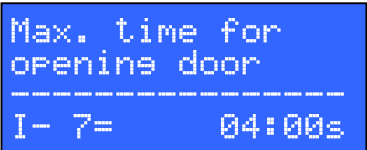



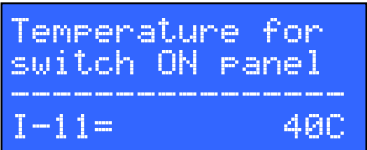
4/6 Parameters		8/12 Time	Type H
H-10	GONG signal duration		0-2,55s
<div><div><div>Duration time GONG / UNLOCK ----- H-10= 2.00s</div></div><div><p>The parameter is used to adjust the duration of the gong signal coming to the station. The arrival of the elevator on the slowdown zone switch triggers the GONG signal.</p><p>For display <b>LC100-M</b> or L displays to signalize gong PML parameters must be set (mark „*“ below letter „C“ for stations with <b>LC100-M</b> or L display).</p></div></div>			
H-11	UNLOCKING signal duration		0-25s
<div><div><div>Activations time UNLOCKING DOOR ----- H-11= 2.00s</div></div><div><p>The parameter is used to adjust the duration of landing door unlocking signal. Time H-09 is unlocking signal delay after cabin door opening. Unlocking signal is used with semi-automatic landing door and automatic cabin door.</p><p>For display <b>LC100-M</b> or L to signalize unlocking PML parameters must be set (mark „*“ below letter „E“ for stations with <b>LC100-M</b> or L display).</p></div></div>			
H-12	PHOTOCELL signal activation		0-250s
<div><div><div>Time for signal PHOTOCELL ----- H-12= 20s</div></div><div><p>Parameter is used to delay photocell (<b>FI-263</b> or <b>FI-273</b>) signalization on <b>LC100-M</b> or L display.</p><p>If the photocell input is active longer than the time set by parameter, it is saved in the statistic and signaled on display.</p><p>For display <b>LC100-M</b> or L to signalize photocell activity PML parameters must be set (mark „*“ below letter „I“ for stations with <b>LC100-M</b> or L display).</p></div></div>			
H-13	CLOSING OBSTACLES signal activation		0-250s
<div><div><div>Time for signal OBSTACLE DOOR ----- H-13= 30s</div></div><div><p>Parameter is used to delay closing door obstacle (<b>FI-262</b> or <b>FI-272</b>) signalization on <b>LC100-M</b> or L display.</p><p>If the closing door obstacle input is active longer than the time set by parameter, it is saved in the statistic and signaled on display. For display <b>LC100-M</b> or L to signalize closing door obstacle PML parameters must be set (mark „*“ below letter „I“ for stations with <b>LC100-M</b> or L display).</p></div></div>			
H-14	STOP signal activation		0-41min40s
<div><div><div>Time for signal STOP min:sec ----- H-14= 02:30</div></div><div><p>Parameter is used to delay safety circuit STOP interrupt signalization on <b>LC100-M</b> or L.</p><p>If the safety circuit STOP input is interrupt longer than the time set by parameter, it is saved in the statistic and signaled on display. For display <b>LC100-M</b> or L to signalize safety circuit STOP interruption PML parameters must be set (mark „*“ below letter „G“ for stations with <b>LC100-M</b> or L display).</p></div></div>			
H-15	LANDING DOOR signal activation		0-41min40s
<div><div><div>Time for signal L.DOOR min:sec ----- H-15= 02:30</div></div><div><p>Parameter is used to delay landing door open on <b>LC100-M</b> or L display.</p><p>If the landing door input is active longer than the time set by parameter, it is saved in the statistic and signaled on display. For display <b>LC100-M</b> or L to signalize landing door open PML parameters must be set (mark „*“ below letter „H“ for stations with <b>LC100-M</b> or L display).</p></div></div>			

4/6 Parameters		8/12 Time	Type H
H-16	GONG signal duration		0-1
<div><div><div>Save energy mode [0/1] ----- H-16= 1</div></div><div><p>Parameter is used for switching on the power saving mode. In the power saving mode after time set in parameter <b>H-17</b> all the displays are switched off and output for power saving <b>FO-57</b> is switched on.</p><p>Trough relay with the power saving <b>FO-57</b> it is possible to disconnect all unnessesary power consumers.</p></div></div>			
H-17	UNLOCKING signal duration		0-25s
<div><div><div>Time for save Energy min:sec ----- H-17= 10.00</div></div><div><p>The parameter is the time after which power energy mode is switched on.</p></div></div>			
H-18	Output FO-058 OFF delay		0.0-3.0s
<div><div><div>Delay off for function 58 ----- H-18= 0.0 s</div></div><div><p>Output function <b>FO-058</b> OFF delay. It is used for A3 overspeed governer.</p></div></div>			
H-19	Acceleration time (for time positioning)		0.0-20.0s
<div><div><div>Accel. Time (for time pos.) ----- H-19= 0.00s</div></div><div><p>Estimated elevator acceleration time. (time it takes the elevator to reach full speed for standstill; used only for time positioning system)</p></div></div>			



## 4.9 Protection - Type I

4/6 Parameters		9/12 Protection	Type I
I-01	Cold state PTC resistance	0-9999Ω	
<div>PTC resistance in cold state ----- I- 1=        750Ω</div>		<p>Cold state PTC resistance.</p> <p>When the resistance of the PTC probe connected to the input XC8:2 rises above the value defined by parameter I-02 elevator ends current travel, activates motor fan, if there is any, and waits for PTC resistance to fall below the value I-01.</p>	
I-02	Warm state PTC resistance	0-9999Ω	
<div>PTC resistance in warm state ----- I- 2=        2250Ω</div>		<p>Warm state PTC resistance.</p>	
I-03	Normal travel max. time	0-250s	
<div>Max. drive time in normal travel ----- I- 3=        02:50</div>		<p>Maximum time of normal travel.</p>	
I-04	Leveling max. time	0-250s	
<div>Max. drive time in low speed ----- I- 4=        10.00s</div>		<p>Maximum time of leveling travel. Maximal time of traveling in low speed. From order to slow to activating stoping in station switch should not take more than the time set by parameter . Otherwise elevator indicates error „slow speed fail.“.</p>	
I-05	Releveling max. time	0-250s	
<div>Max. drive time in releveling ----- I- 5=        5.00s</div>		<p>Maximum time of relevening. From order to relevel to activating stoping in station switch should not take more than the time set by the parameter. Otherwise elevator indicates error „releveling fail.“</p>	
I-06	Evacuation max. time	0-250s	
<div>Max. drive time in evacuation ----- I- 6=        30.00s</div>		<p>Maximum evacuation travel time. Maximum passenger evacuation time from cabin.</p>	

4/6 Parameters		9/12 Protection	Type I
I-07	Maximal time for door opening	0-25s	
		Maximal time for opening the doors. When the end switches for the doors are used (FI-260 or FI-270) opening signal is active until door open signal is active. I-07 is maximal time in which open signal must appear. If signal does not appear Door A open err" or „Door B open error" occurs.	
I-08	Maximal time for door closing	0-25s	
		Maximal time for closing the doors. When the end switches for the doors are used (FI-261 or FI-271) closing signal is active until door close signal is active. I-08 is maximal time in which door signal must appear. If signal does not appear „Door A close err" or „Door B close error" occurs.	
I-09	Maximal time for locking the doors	0-25s	
		Represents the time for door locked signal to appear. It is the time from locking the doors command to signal that the doors are locked. If in this time door locked signal is not active „door locking err" occurs.	
I-10	Temperature for switching off the control board	0-85°C	
		Parameter for switching off the control board. If the temperature measured on the procesor reaches the set value the control board is switched off (the program is not procesed) after the temperature falls below the value set in I-11 the board is switched on again.	
I-11	Temperature for switching on the control board	0-85°C	
		Parameter for setting the temperature for switching on the control panel.	

4/6 Parameters		9/12 Protection	Type I
I-12	Temperature for switching the control board fan ON		0-85°C
<div><div>Temperature for fan panel ON ----- I-12= 50C</div><div>Parameter for setting the temperature for control board fan. If the procesor temperature reaches the set value the output with the function <b>FO-35</b> is switched on. Output for control board fan stays active until the temperature falls below the value set in <b>I-13</b>.</div></div>			
I-13	Temperature for switching the control board fan OFF		0-85°C
<div><div>Temperature for fan panel OFF ----- I-13= 40C</div><div>Parameter for setting the temperature for switching off the control board fan.</div></div>			

## 4.10 Configurations - Type N

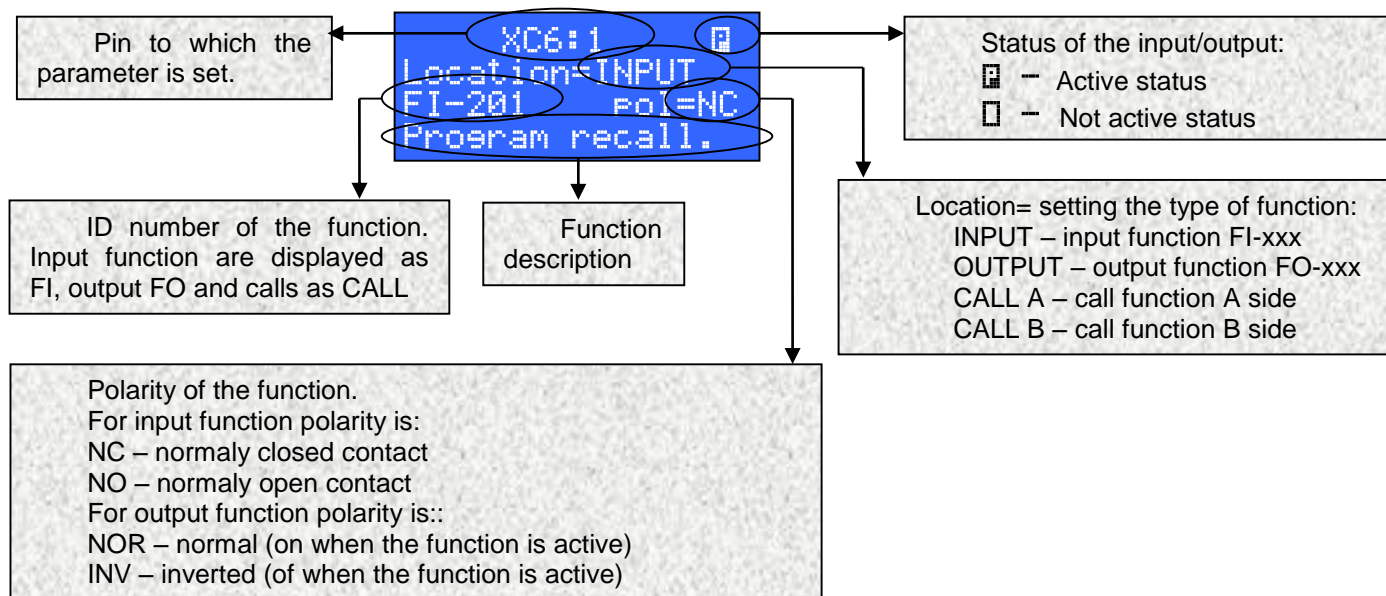
4/6 Parameters

10/12 Configurations

Type N

Configurations menu is for programming the input and output pins of LC100 boards.

Example of configuring pin XC6:1 to have a function „program recall“:



Main rule for parameters:

If some parameters are not set then the function of that parameter is swithed of (Example: If the limit switches for the door are not set then doors are opened as defined by the parameter D-13 and closing is done until safety circuit is closed).

Polarity of the function can be set only with input and output function while polarity of the calls is preset to NO and can't be changed.

## OUTPUT FUNCTION TABLE

NO	DYSPLAY ON LC100-D	DESCRIPTION
<b>FO-001</b>	DRIVE UP	Up travel command.
<b>FO-002</b>	DRIVE DOWN	Down travel command.
<b>FO-003</b>	LOW SPEED M	Slow speed travelling command.
<b>FO-004</b>	HIGH SPEED V	High speed travelling command.
<b>FO-005</b>	SERVICE SPEED R	Inspection speed travelling command.
<b>FO-006</b>	LEVELING SPEED P	Leveling speed travelling command.
<b>FO-007</b>	MEDIUM SPEED I	Medium speed travelling comand.
<b>FO-008</b>	START MOT.CONT.	Motor contactor start command for frequency regulated elevator. The function is impuls which is activated simultaneously with the function drive up or drive down and is active during the time set by parameter <b>T-5</b> .
<b>FO-009</b>	MOTOR CONTACTORS	Motor contactors command for frequency regulated elevator. The function is switched on parallel with the function drive up or drive down and lasts entire drive.
<b>FO-010</b>	INVERTER RESET	Frequency inverter reset function. Function is on when the input <b>FI-226</b> „inverter control“ is activated. Reset function is on for 1s and repeats to switch on every 5s until inverter control is ok.
<b>FO-011</b>	BRAKE CONTROL	Function to switch on contactor for the brake. Function is used for frequency regulated elevators. Time to power on and power of the brake can be set through parameters <b>C-10</b> and <b>C-11</b> .
<b>FO-012</b>	LOW BRAKE VOLTAGE	Function for energy saving on the brake. Function is powered simultaneously with the brake control function and lasts time which is programable through parameter <b>C-12</b> .
<b>FO-013</b>	START PUMP (Y)	Function for starting the pump on the hydraulic elevators.
<b>FO-014</b>	VALVE UP	Function for powering the up direction valve.
<b>FO-015</b>	VALVE DOWN	Function for powering the high speed up direction valve.
<b>FO-016</b>	VALVE HIGH DOWN	Function for powering the high speed down direction valve.
<b>FO-017</b>	LEVELING PUMP	Function for powering the relevelling pump.
<b>FO-018</b>	MAIN MOTOR FAN	Function for main motor cooling fan. Function is on when <b>FI-208</b> „bimetal sensor“ is on and lasts until time <b>C-13</b> expires.
<b>FO-019</b>	SUPPLY CONTACTOR	Supply contactor command. It is used with frequency regulated elevators with automatic evacuation of passengers. Function is on when time <b>T-3</b> expires if there is no input on function for evacuation <b>FI-207</b> .
<b>FO-020</b>	UPS CONTACTOR	Emergency power supply contactor command. It is used with frequency regulated elevators with automatic evacuation of passengers. Function is on when time <b>T-4</b> expires if the evacuation input <b>FI-207</b> is active.
<b>FO-021</b>	ENABLE LEV/OPE	Function to enable relevelling and preopening the door. Function is active when releveing if the inputs „stopping zone“ ( <b>FI-258</b> ) and one of the stopping inputs ( <b>FI-256</b> or <b>FI-257</b> ) are active.
<b>FO-022</b>	VVVF ENABLE	Frequency inverter enable function. Output is active if safety circuit is on.
<b>FO-023</b>	MOTOR PUMP HID	Function for motor pump used in NGV agregats.
<b>FO-024</b>	HIDRO UP DELAY	Additional hydraulic pump function..
<b>FO-025</b>	TEST PULSE A3	
<b>FO-026</b>	LIFT IN STOP	Function is active when the car is in floor level - <b>FI-256</b> or <b>FI-257</b> is active.
<b>FO-027</b>	LIFT WORK	Function is active if the elevator is in normal drive, and there is no error active.
<b>FO-028</b>	LIFT ERROR	Function is active when the lift is in error.
<b>FO-029</b>	END OF EVACUAT.	End of evacuation function. It is used in elevators with automatic passenger evacuation. The function is on when automatic evacuation is over.
<b>FO-030</b>	FIRE PRG ON	Fire program on function. Function is active when there is one of the fire programs active – functions <b>FI-210</b> to <b>FI-214</b> .

NO	DYSPLAY ON LC100-D	DESCRIPTION
<b>FO-031</b>	END OF FIRE PRG	End of fire program function. Function is on when fire program has ended.
<b>FO-032</b>	SHAFT LIGHT	Function for controlling the shaft light. Function is on when inspection drive is on, and turned off when turned back to normal drive and time <b>H-05</b> expired. Function is not working if the function elevator test <b>FI-219</b> is on.
<b>FO-033</b>	TIMEREL 1 OUT	Output function for time relay 1. Setting of the relay is explained in the parameters type H.
<b>FO-034</b>	TIMEREL 2 OUT	Output function for time relay 2. Setting of the relay is explained in the parameters type H.
<b>FO-035</b>	CONTR.PANEL FAN	Output function for control panel fan managment.
<b>FO-036</b>	BRAKE IN EVAC.	Output function for brake opening in evacuation.
<b>FO-037</b>	ERROR (A3)	Output function is active in case UCM fault.
<b>FO-038</b>	PIT LIGHT GREEN	
<b>FO-039</b>	PIT LIGHT RED	
<b>FO-040</b>	OPENING DOOR A	Open door A command
<b>FO-041</b>	CLOSING DOOR A	Close door A command.
<b>FO-042</b>	LOW SPEED DOOR A	Low speed command to door A. It is used for frequency regulated cabin doors. Function is activated according to the functions <b>FI-266</b> or <b>FI-267</b> .
<b>FO-043</b>	RESISTORS DOOR A	Function for controlling the resistor for reversing the cabin doors A. Function is used for doors with spindle. When reversing the doors power for the doors is given through resistors. Time for this function can be set through parameter <b>D-35</b> .
<b>FO-044</b>	OPENING DOOR B	Open door B command
<b>FO-045</b>	CLOSING DOOR B	Close door B command.
<b>FO-046</b>	LOW SPEED DOOR B	Low speed command to door B. It is used for frequency regulated cabin doors. Function is activated according to the functions <b>FI-266</b> or <b>FI-267</b> .
<b>FO-047</b>	RESISTORS DOOR B	Function for controlling the resistor for reversing the cabin doors B. Function is used for doors with spindle. When reversing the doors power for the doors is given through resistors. Time for this function can be set through parameter <b>D-35</b> .
<b>FO-048</b>	RETARING CAM	Function for managment the retaring cam. Function is active during drive.
<b>FO-049</b>	LOW VOLTAGE CAM	Low voltage control for retaring cam.
<b>FO-050</b>	CAR FAN ORDER	Cabin fan control function. It is activated according to the type of control – parameter <b>H-01</b> . Engage time for fan is defined by parameter <b>H-02</b> .
<b>FO-051</b>	CAR LIGHT ORDER	Cabin light control function. It is activated according to the type of control – parameter <b>H-03</b> . Engage time for cabin light is defined by parameter <b>H-03</b> .
<b>FO-052</b>	IMPULS NEW STOP	New stop output function. Function is impulse after changing the floor. Engage time of the function is when cabin pass by counting switch.
<b>FO-053</b>	ALARM ENABLE	Alarm enable function. Function is active when the car is at floor and the doors are opened.
<b>FO-054</b>	IMP NEW CAR CALL	New cabin call function. Function is impulse and it is triggered every time when cabin call is activated.
<b>FO-055</b>	IMP.STOPPING	Stopping impulse function. Function is triggered when elevator is slowing down – when cabin pass by counting switch for selected floor.
<b>FO-056</b>	OUT OF ORDER	Function active when elevator is out of order.
<b>FO-057</b>	OUT SAVE ENERGY	Output function for energy saving mode.
<b>FO-058</b>	OUT OVERSP.G. A3	Output for powering the overspeed governor coil.
<b>FO-059</b>	PHASE/SEO OK	
<b>FO-060</b>	SIG. UP STAND.	Reserved direction up signalization.
<b>FO-061</b>	SIG. DOWN STAND.	Reserved direction down signalization.



NO	DYSPLAY ON LC100-D	DESCRIPTION
<b>FO-062</b>	SIG. UP TIME	Flashing reserved direction up signalization.
<b>FO-063</b>	SIG. DOWN TIME	Flashing reserved direction down signalization.
<b>FO-064</b>	SIG. NEXT UP	Next drive up signalization.
<b>FO-065</b>	SIG. NEXT DOWN	Next drive down signalization.
<b>FO-067</b>	SIG. GONG DOWN	Gong for next travel down.
<b>FO-068</b>	LIFT OCUPATED	Lift in use signalization. Function is used for single travel elevators, parameter <b>B-01</b> =0. Function is activated when call is made, and is deactivated when drive has ended and the time <b>B-02</b> has expired.
<b>FO-069</b>	LIFT OCUPATED T	Flashing lift in use signalization. Function is used for single travel elevators, parameter <b>B-01</b> =0. Function is activated when call is made, and is deactivated when drive has ended and the time <b>B-02</b> has expired.
<b>FO-070</b>	SIG.CAR OVERLOAD	Car overload signalization. Function is active when input 100% load is active, <b>FI-242</b> .
<b>FO-071</b>	LEAVE THE CAR	Leave the car signalization.
<b>FO-072</b>	PHOTOCELL ACTIVE	Photocell active signalization. Function is active when photocell side A, or side B is active, inputs <b>FI-263</b> or <b>FI-273</b>
<b>FO-073</b>	SIGNAL UNLOCKING	Signalization for unlocked landing door. Function is used when having semiautomatic landing doors.
<b>FO-074</b>	UNLOCKING DOOR A	Output function for door A unlocking device.
<b>FO-075</b>	UNLOCKING DOOR B	Output function for door B unlocking device.
<b>FO-076</b>	DOOR A OPENED	Output function, active when door A is opened.
<b>FO-077</b>	DOOR B OPENED	Output function, active when door B is opened.
<b>FO-078</b>	TEST IMPULSE 1S	Output function pulsating 1s „on“ 1s „off“
<b>FO-079</b>	RESET OUT	Output function for reset, active when reset button on LC100-D keypad is pressed.
<b>FO-080</b>	STOP: BIN.0	Cabin position output – binary code bit 0. It is used for car position signalization the way that binary outputs are active for the active floor according to the <b>ADRESS TABLE</b> .
<b>FO-081</b>	STOP: BIN.1	Cabin position output – binary code bit 1.
<b>FO-082</b>	STOP: BIN.2	Cabin position output – binary code bit 2.
<b>FO-083</b>	STOP: BIN.3	Cabin position output – binary code bit 3.
<b>FO-084</b>	STOP: BIN.4	Cabin position output – binary code bit 4.
<b>FO-085</b>	STOP: BIN.5	Cabin position output – binary code bit 5.
<b>FO-086</b>	STOP: GRAY.0	Cabin position output – gray code bit 0. It is used for car position signalization the way that binary outputs are active for the active floor aording to the <b>GRAY CODE TABLE</b>
<b>FO-087</b>	STOP: GRAY.1	Cabin position output – gray code bit 1.
<b>FO-088</b>	STOP: GRAY.2	Cabin position output – gray code bit 2.
<b>FO-089</b>	STOP: GRAY.3	Cabin position output – gray code bit 3.
<b>FO-090</b>	STOP: GRAY.4	Cabin position output – gray code bit 4.
<b>FO-091</b>	STOP: GRAY.5	Cabin position output – gray code bit 5.
<b>FO-100</b>	STOP=00	Function for the unknown position of the cabin.
<b>FO-092</b>	TEST OUTPUT 1	Output function directly connected to input function FI-301, when input is active then output FO-92 is active.
<b>FO-093</b>	TEST OUTPUT 2	Output function directly connected to input function FI-302, when input is active then output FO-93 is active.

NO	DYSPLAY ON LC100-D	DESCRIPTION
<b>FO-101</b>	STOP=01	Function cabin at floor 1.
<b>FO-102</b>	STOP=02	Function cabin at floor 2.
<b>FO-1xx</b>	STOP=XX	Function cabin at floor XX.

## INPUT FUNCTIONS TABLE

NO	DYSPLAY ON LC100-D	DESCRIPTION
<b>FI-201</b>	Program recall	Input function for switching to recall program.
<b>FI-202</b>	Recall UP	Recall pushbutton up input function.
<b>FI-203</b>	Recall DOWN	Recall pushbutton down input function.
<b>FI-204</b>	Supply control	Input function for power supply phase loss relay control.
<b>FI-205</b>	Safety device ct	Input function for controlling the safety circuit control device used for releveelling and preopening the doors.
<b>FI-206</b>	Short safety sp.	Input function for elevators with short safety space. After the input is once activated (input <b>FI-206</b> ) elevator is blocked until reset button on the LC100-D is pressed.
<b>FI-207</b>	Evacuation	Input function for emergency passanger evacuation. After the input is active elevator begins evacuation according to the parameter <b>A-04</b>
<b>FI-208</b>	Bimetal sensor	Input function for motor bimetal sensor. After the input is activated function motor fan <b>FO-18</b> is switched on.
<b>FI-209</b>	Fan con. control	Input for fan contactor control.
<b>FI-210</b>	Fire program 1	Input for fire program 1. After the input is activated elevator goes to fire program, existing calls are ignored, elevator goes to the station which is defined in the parameter <b>B-07</b> . After the elevator ends with the fire program it is blocked until input is switched off.
<b>FI-211</b>	Fire program 2	Input for fire program 2. After the input is activated elevator goes to fire program, existing calls are ignored, elevator goes to the station which is defined in the parameter <b>B-08</b> . After the elevator ends with the fire program it is blocked until input is switched off.
<b>FI-212</b>	Fire program 3	Input for fire program 3. After the input is activated elevator goes to fire program, existing calls are ignored, elevator goes to the station which is defined in the parameter <b>B-09</b> . After the elevator ends with the fire program it is blocked until input is switched off.
<b>FI-213</b>	Fire program 4	Input for fire program 4. After the input is activated elevator goes to fire program, existing calls are ignored, elevator goes to the station which is defined in the parameter <b>B-17</b> . After the elevator ends with the fire program it is blocked until input is switched off.
<b>FI-214</b>	Reset LC100-C	Reset input for LC100-C board.
<b>FI-215</b>	Out of order	Input for out of order status of the elevator.
<b>FI-216</b>	Input TIMEREL 1	Input function for time relay 1. Setting the time relay is explained in parameters <b>type H</b>
<b>FI-217</b>	Input TIMEREL 2	Input function for time relay 2. Setting the time relay is explained in parameters <b>type H</b>
<b>FI-218</b>	No landing calls	Input for disableing the landing calls.
<b>FI-219</b>	Elevator test	Input for elevator test mode. After the input is activated elevator is in normal drive but the landing calls are disabled and shaft light control is disabled.
<b>FI-220</b>	Con. UP contr.	Input for up travel contactor control.
<b>FI-221</b>	Con. DOWN contr.	Input for down travel contactor control.
<b>FI-222</b>	Con LS control	Input for low speed contactor control.
<b>FI-223</b>	Con HS control	Input for high speed contactor control.

NO	DYSPLAY ON LC100-D	DESCRIPTION
<b>FI-224</b>	Brake control	Input for brake control.
<b>FI-225</b>	Mot con. control	Input for motor contactor control, used for frequency regulated elevators.
<b>FI-226</b>	Inverter control	Input for frequency regulator control.
<b>FI-227</b>	Con Y control	Input for star contactor control for hydraulics elevators.
<b>FI-228</b>	Con D control	Input for delta contactor control for hydraulics elevators.
<b>FI-229</b>	Upper limit contr.	Input for upper final limit switch control. When the input is activated elevator is blocked until manual reset.
<b>FI-230</b>	Safety c. STOP	Safety circuit control input for STOP when LC100-S board not used.
<b>FI-231</b>	Safety c. LAND D	Safety circuit control input for LANDING DOOR when LC100-S board not used.
<b>FI-232</b>	Safety c. DOOR A	Safety circuit control input for DOOR A when LC100-S board not used.
<b>FI-233</b>	Safety c. DOOR B	Safety circuit control input for DOOR B when LC100-S board not used.
<b>FI-234</b>	Safety c. LOCK	Safety circuit control input for LANDING LOCK when LC100-S board not used.
<b>FI-235</b>	Service travel	Inspection drive input
<b>FI-236</b>	Service UP	Inspection drive up input function.
<b>FI-237</b>	Service DOWN	Inspection drive down input function.
<b>FI-238</b>	Empty car	Input to control the presence of the person in the elevator cabin.
<b>FI-239</b>	25% car load	Input for 25% load in the cabin.
<b>FI-240</b>	50% car load	Input for 50% load in the cabin. It is used with frequency regulated elevators with evacuation to determine direction for evacuation. When the load is under 50% (input not active) evacuation is in direction up, when the input is active evacuation is in direction down.
<b>FI-241</b>	Fullfill car	Input for 80% load in the cabin. It is used to determine if the cabin is full loaded. When the input is active the elevator does not stop for landing calls until the input is deactivated.
<b>FI-242</b>	Overload car	Input for 100% load in the cabin. When the input is activated car overload signalization is on, and elevator is blocked until deactivation of the signal.
<b>FI-243</b>	Priority travel	Priority travel input function. When input is activated cabin calls are erased and elevator waits for the priority cabin call. Landing calls are remembered but are not processed until priority drive is deactivated.
<b>FI-244</b>	Fireman travel	Fireman travel input.
<b>FI-245</b>	Car light contr.	Cabin light control input function.
<b>FI-246</b>	Door inside cabin	Input for door inside the cabine.
<b>FI-247</b>	Car call hold	Function for holding the cabin calls for platform use.
<b>FI-248</b>	Brake release	Brake activation input when using manual evacuation <a href="#">A-04=2</a>
<b>FI-249</b>	Service speed 2	Input for activating service speed 2.
<b>FI-250</b>	Reference UP 1	Input for upper reference switch for nominal speed.
<b>FI-251</b>	Reference UP 2	Input for upper reference switch for second nominal speed.
<b>FI-252</b>	Reference DOWN 1	Input for lower reference switch for nominal speed.
<b>FI-253</b>	Reference DOWN 2	Input for lower reference switch for second nominal speed.
<b>FI-254</b>	Counting UP	Counting input for up direction travel.
<b>FI-255</b>	Counting DOWN	Counting input for down direction travel.
<b>FI-256</b>	Stopping UP	Stopping switch input for up direction travel.
<b>FI-257</b>	Stopping DOWN	Stopping switch input for down direction travel.

NO	DYSPLAY ON LC100-D	DESCRIPTION
<b>FI-258</b>	Stoppins zone	Input for stopping zone switch.
<b>FI-259</b>		
<b>FI-260</b>	Openins limit A	Opening limit switch input for door A
<b>FI-261</b>	Closins limit A	Closing limit switch input for door A
<b>FI-262</b>	Obstacle door A	Input for closing door obstacle side A
<b>FI-263</b>	Photocell door A	Input for photocell door A
<b>FI-264</b>	Open but.door A	Input for door A open pushbutton.
<b>FI-265</b>	Close but.door A	Input for door A close pushbutton.
<b>FI-266</b>	Slowins open A	Input for slowing the door A opening speed.
<b>FI-267</b>	Slowins close A	Input for slowing the door A closing speed.
<b>FI-268</b>	Open but.door A2	Additional input for door A open pushbutton.
<b>FI-269</b>	Close but.door A2	Additional input for door A close pushbutton.
<b>FI-270</b>	Openins limit B	Opening limit switch input for door B
<b>FI-271</b>	Closins limit B	Closing limit switch input for door B
<b>FI-272</b>	Obstacle door B	Input for closing door obstacle side B
<b>FI-273</b>	Photocell door B	Input for photocell door B
<b>FI-274</b>	Open but.door B	Input for door B open pushbutton.
<b>FI-275</b>	Close but.door B	Input for door B close pushbutton.
<b>FI-276</b>	Slowins open B	Input for slowing the door B opening speed.
<b>FI-277</b>	Slowins close B	Input for slowing the door B closing speed.
<b>FI-278</b>	Open but.door B2	Additional input for door B open pushbutton.
<b>FI-279</b>	Close but.door B2	Additional input for door B close pushbutton.
<b>FI-280</b>	Photocell do. A2	Additional input for photocell door A
<b>FI-281</b>	Photocell do. B2	Additional input for photocell door B
<b>FI-282</b>	Auto call 1-2	Input for automatic call from floor 1 to floor 2 for car elevators.
<b>FI-283</b>	Auto call 2-1	Input for automatic call from floor 2 to floor 1 for car elevators.
<b>FI-284</b>	Auto call 1-3	Input for automatic call from floor 1 to floor 3 for car elevators.
<b>FI-285</b>	Auto call 3-1	Input for automatic call from floor 3 to floor 1 for car elevators.
<b>FI-286</b>	Auto call 2-3	Input for automatic call from floor 2 to floor 3 for car elevators.
<b>FI-287</b>	Auto call 3-2	Input for automatic call from floor 3 to floor 2 for car elevators.
<b>FI-288</b>	Sig. RDY NGV(A3)	Input control for READY relay from NGV agregat.
<b>FI-289</b>	Sig. RUN NGV(A3)	Input control for RUN relay from NGV agregat.
<b>FI-290</b>	Overspd.gov.(A3)	Overspeed governor coil control input.
<b>FI-291</b>	Saf.cir.gov.(A3)	Overspeed contact control input.
<b>FI-292</b>	Ctr.con.gov.(A3)	Overspeed contactor control input.

NO	DYSPLAY ON LC100-D	DESCRIPTION
<b>FI-293</b>	Short safety sp2	Additional input function for elevator with short pitt . After input <b>FI-293</b> is active elevator is blocked until reset on the LC100-D keypad. Function is identical as function <b>FI-206</b> .
<b>FI-294</b>	Open but.d. A+B	Input for open door button for both csbin doors „A“ and „B“
<b>FI-295</b>	Close but.d. A+B	Input for close door button for both csbin doors „A“ and „B“
<b>FI-296</b>	Disable call	Input function for disabeling the calls defined by the parameter <b>B-17</b> .
<b>FI-297</b>	Phase L1 (R)	Input for power supply control phase „R“
<b>FI-298</b>	Phase L2 (S)	Input for power supply control phase „S“
<b>FI-299</b>	Phase L3 (T)	Input for power supply control phase „T“
<b>FI-300</b>	Ctr. NCUM10 (A3)	Input for controlling the UMD safety device.
<b>FI-301</b>	Test input 1	Input function for activating output function FO-92.
<b>FI-302</b>	Test input 2	Input function for activating output function FO-93.
<b>FI-303</b>	Earthquake pre.	Input function for earthquake program. Elevator stops in the nearest floor and stays with the open doors until input is deactivated.
<b>FI-304</b>	Spd.stp >0.1 m/s	Input for leveling speed control.
<b>FI-305</b>	Evak. door A	Input function for door A opening in case of automatic evacuation.
<b>FI-306</b>	Evak. door B	Input function for door B opening in case of automatic evacuation.
<b>FI-307</b>	Program lift boy	Input for activating the lift boy program.
<b>FI-308</b>	Landing door N1	Input for control of the landing door contact for the first floor door, used in elevators with the short pit space.
<b>FI-309</b>	Pillion in shaft	Input for control of the pillion in the pitt, used in elevators with the short pit space.
<b>FI-310</b>	Valve down A3	Input for controlling the additional valve for down drive.
<b>FI-311</b>	UPS control	Input for control of the UPS..
<b>FI-312</b>	Test NORM 2454-2	Input for active function for testing norme 2454-2
<b>FI-313</b>	I-valve control	Input for control of the Bucher I-Valve

## CABIN CALLS SIDE A TABLE

NO	DYSPLAY ON LC100-D	DESCRIPTION
401	CAR CALL 1A	Cabin call A side for 1st floor.
402	CAR CALL 2A	Cabin call A side for 2nd floor.
...	.....	.....
440	CAR CALL 40A	Cabin call A side for 40th floor.
441	LAND C.UP 1A	Landing call up A side for 1st floor.
442	LAND C.UP 2A	Landing call up A side for 2nd floor.
...	.....	.....
479	LAND C.UP 39A	Landing call up A side for 39th floor.
482	LAND C.DOWN 2A	Landing call down A side for 1st floor.
483	LAND C.DOWN 3A	Landing call down A side for 2nd floor.
...	.....	.....
520	LAND C.DOWN 40A	Landing call down A side for 40th floor.
561	CAR FUN BUTTON	Car fan input.

## CABIN CALLS SIDE B TABLE

NO	DYSPLAY ON LC100-D	DESCRIPTION
601	CAR CALL 1B	Cabin call B side for 1st floor.
602	CAR CALL 2B	Cabin call B side for 2nd floor.
...	.....	.....
640	CAR CALL 40B	Cabin call B side for 40th floor.
641	LAND C.UP 1B	Landing call up B side for 1st floor.
642	LAND C.UP 2B	Landing call up B side for 2nd floor.
...	.....	.....
679	LAND C.UP 39B	Landing call up B side for 39th floor.
682	LAND C.DOWN 2B	Landing call down B side for 1st floor.
683	LAND C.DOWN 3B	Landing call down B side for 2nd floor.
...	.....	.....
720	LAND C.DOWN 40B	Landing call down B side for 40th floor.



## 4.11 P-M-L Modul - Type P

4/6 Parameters

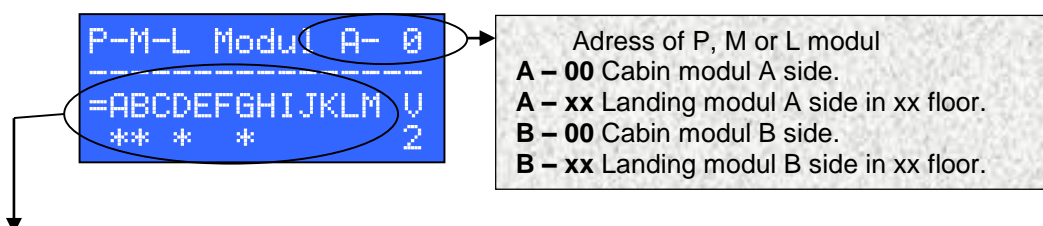
11/12 P-M-L Modul

Type P

In the PML modul menu it is possible to set the work of the signalization modules [LC100-P](#), [LC100-M](#) or [LC100-L](#). Sign „\*“ under the letter means that for that module is activated mode which is explained in the description:

Example shows setting of the cabin signalization module (adress 0) which will display:

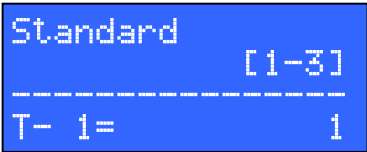

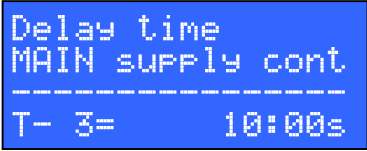



Cabin position	(A)
Car travel direction	(B)
Sound signal for stopping	(D)
Sound and light signal for STOP	(G)



Configuration for cabine and landing calls modules:




- A** – Car position signalization  
Displays floor markings defined in G-00 to G-40 parameters.
- B** – Car travelling direction signalization  
Displays up and down arrow when elevator is driving
- C** – Next car travel direction signalization  
Displays up and down arrow when elevator is driving, and after stopping shows next drive direction
- D** – Sound signal for car stopping (arriving to the floor)
- E** – Sound signal for unlocking the landing doors
- F** – Sound and light signal for cabin overload
- G** – Sound and light signal for STOP
- H** – Sound and light signal for landing door open.
- I** – Sound and light signal for active photocell
- J** – „Out of order“ light signalization
- K** – „Fire program active“signalization
- L** – Disable landing call
- M** – „Landing call button pressed“ sound signal, for modul A-0 „New cabin call“ sound signal
- V**- speaker volume (1 to 7)

## 4.12 Factory - Type T

4/6 Parameters		12/12 Factory	Type T
T-01	Standard		1-3
		Parameter for choosing the standard for software. 1 – <b>EN81</b> standard 2 – Reserved 3 – Reserved	
T-02	Time for starting the inverter		0-25s
		Time for powering the frequency inverter. Defines the time for regulator to power up to ready state. Controlling the regulator is done through input with function <b>FI-226</b> .	
T-03	Time for powering the main supply contactor		2-25s
		Time for switching on the main supply contactor. Defines the delay to switch on the output function <b>FO-019</b> . It is used for frequency regulated elevators with evacuation. When the control cabinet is powered if the input for evacuation <b>FI-207</b> is not active output for main supply contactor ( <b>FO-019</b> ) is switched on with delay <b>T-03</b> . If the input <b>FI-207</b> is active then output for UPS contactor ( <b>FO-020</b> ) is switched on with delay <b>T-04</b> .	
T-04	Time for powering the UPS contactor		0-25s
		Time for switching on the UPS supply contactor. Defines the delay to switch on the output function <b>FO-020</b> . It is used for frequency regulated elevators with evacuation. When the control cabinet is powered if the input for evacuation <b>FI-207</b> is not active output for main supply contactor ( <b>FO-019</b> ) is switched on with delay <b>T-03</b> . If the input <b>FI-207</b> is active then output for UPS contactor ( <b>FO-020</b> ) is switched on with delay <b>T-04</b> .	
T-05	Time for start motor conntactors		0-2s
		Working time for the motor start function ( <b>FO-08</b> ).	
T-06	Next service DAY		0-31
		Function is used for elevators with surveillance system to keep track for servicing the elevators. Parameter <b>T-06</b> is for setting the day in the month, parameter <b>T-07</b> is for setting the month and <b>T-08</b> is for setting the year.	

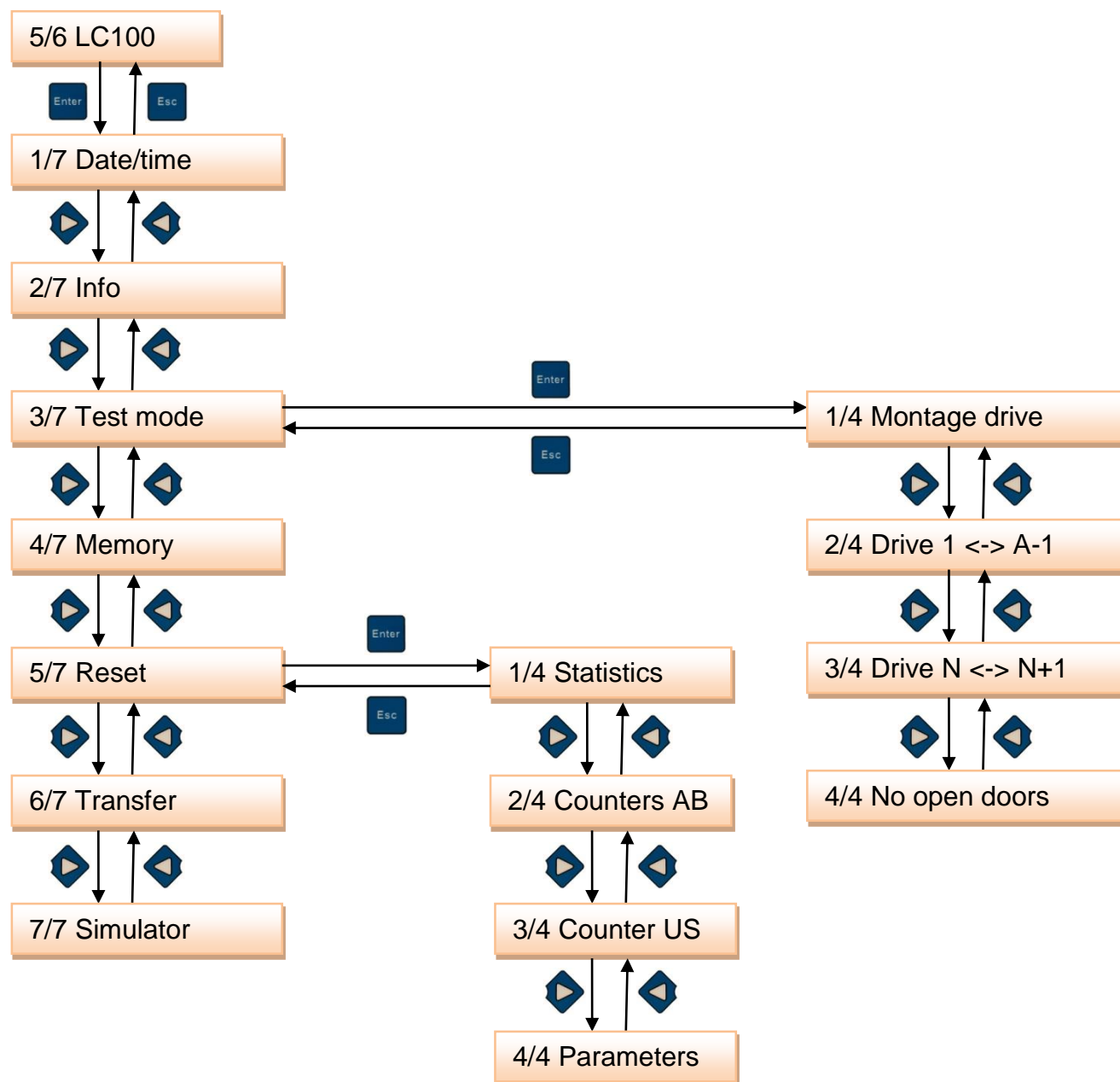
4/6 Parameters		12/12 Factory	Type T
T-07	Next service MONTH		0-12
<div>Next srvice month ----- T- 7=</div>		Function is used for elevators with surveillance system to keep track for servicing the elevators. Parameter T-06 is for setting the day in the month, parameter T-07 is for setting the month and T-08 is for setting the year.	
T-08	Next service YEAR		0-99
<div>Next service year ----- T- 8=</div>		Function is used for elevators with surveillance system to keep track for servicing the elevators. Parameter T-06 is for setting the day in the month, parameter T-07 is for setting the month and T-08 is for setting the year.	
T-09	Monitoring type		0/1
<div>Monitor type [0-1] ----- T- 9= 0</div>		<p>Monitoring type (filtering the parameters): <b>0 – on</b> parameter filtering is switched on. <b>1 – off</b> parameter filtering is switched off.</p> <p>When the filtering is switched off all parameters of the system are visible through the LC100-D terminal.</p> <p>When the filter is „on“ parameters and functions are visible according to each other. If some parameters are not reachable that means the filter is „on“.</p> <p><b>Example 1:</b> If the parameter „Main drive“ is set to C-01=3 (frequency regulated elevator). Then all other parameters that are related are visible (C-02, C-03 ... C-12, C-13), while all other parameters are not visible (C-14, C-15, C-16, C-17 – parameters for hydraulic elevators).</p> <p><b>Example 2:</b> If the parameter „Cabin door“ is set to D-01=1 (one automatic door). Then all parameters for door A are visible and parameters for door B are hidden.</p> <p><b>Example 3:</b> Parameter „Number of stops“ is set to A-01=7 (elevator with 7 floors). Then for cabin calls is possible to set only seven calls, and all other parameters that are for higher floors are not visible.</p>	
T-10	CAN frequency		0-99
<div>Baud rate CAN 0/1 ----- T-10= 0</div>		Parameter for changing the CAN baudrate.	

T-11	Factory setting	
<div> <pre> Factory setting ----- T-11=  ABCDEFGH       * * * </pre> </div> <div> <p>A – Close button priority off</p> <p>B – Automatic reset EN81 error and give output FO-79 - after service travel</p> <p>C – deactivating phase control from LC100-VFD plate</p> <p>D – weight scale deactivating</p> <p>E –</p> <p>F –</p> <p>G –</p> <p>H –</p> </div>		
T-12	Output tables bin/gray codes	
<div> <pre> Output tables bin/gray codes ----- T-12 Bin=0 Gry=1 </pre> </div> <div> <p>Output table selection for the display;</p> <p>Bin=0 – first station start with binary 0001</p> <p>Bin=1 – first station start with binary 0000</p> <p>Gry=1 – standardy gray code output</p> <p>Gry=2 – shifted gray code output (<i>Turkey market</i>)</p> </div>		
T-13	Simulator enable	0/1
<div> <pre> Simulator enable               0/1 ----- T-13=      0 </pre> </div> <div> <p>Enable possibility to show simulator mode in LC100 menu.</p> </div>		
T-14	Control times valve down A3	
<div> <pre> Baud rate CAN               0/1 ----- T-14      0.50 s </pre> </div> <div> <p>Parameter for changing the CAN baudrate.</p> </div>		
T-15	Delay on order direction ALGI	
<div> <pre> Delay on order direction ALGI ----- T-15=      0.50 s </pre> </div>		

T-16	ADL config																									
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">  </div> <div style="width: 65%;"> <p>A – Drive direction <i>(no selected – normal, selected – inverted)</i></p> <p>B – Impulse direction <i>(no selected – normal, selected – inverted)</i></p> <p>C – Reset by CAN enable/disable <i>(no selected – enable, selected – disable)</i></p> <p>D – Contactor status signal transfer from ADL by CAN <i>(no selected – enable, selected – disable)</i></p> <p>E – Brake status signal transfer from ADL by CAN <i>(no selected – enable, selected – disable)</i></p> <p>F – ADL ready signal transfer from ADL by CAN <i>(no selected – enable, selected – disable)</i></p> <table border="1" style="margin-top: 10px;"> <tr> <td>G</td><td></td><td>Positioning system by encoder on ADL enable with resolution 1</td></tr> <tr> <td>H</td><td></td><td>Impulses = impulses / 1</td></tr> <tr> <td>G</td><td>*</td><td>Positioning system by encoder on ADL enable with resolution 2</td></tr> <tr> <td>H</td><td></td><td>impulses = impulses / 2</td></tr> <tr> <td>G</td><td></td><td>Positioning system by encoder on ADL enable with resolution 3</td></tr> <tr> <td>H</td><td>*</td><td>impulses = impulses / 4</td></tr> <tr> <td>G</td><td>*</td><td>Positioning system by encoder on ADL disable (another source of impulses in use)</td></tr> <tr> <td>H</td><td>*</td><td></td></tr> </table> </div> </div>			G		Positioning system by encoder on ADL enable with resolution 1	H		Impulses = impulses / 1	G	*	Positioning system by encoder on ADL enable with resolution 2	H		impulses = impulses / 2	G		Positioning system by encoder on ADL enable with resolution 3	H	*	impulses = impulses / 4	G	*	Positioning system by encoder on ADL disable (another source of impulses in use)	H	*	
G		Positioning system by encoder on ADL enable with resolution 1																								
H		Impulses = impulses / 1																								
G	*	Positioning system by encoder on ADL enable with resolution 2																								
H		impulses = impulses / 2																								
G		Positioning system by encoder on ADL enable with resolution 3																								
H	*	impulses = impulses / 4																								
G	*	Positioning system by encoder on ADL disable (another source of impulses in use)																								
H	*																									
T-17	Stp NORM 2454-2	0-40																								
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">  </div> <div style="width: 65%;"> <p>After activation of input <b>FI-312</b> elevator reach the station which is defined with parameter <b>T-17</b>, without opening the doors, descent automatically elevator for length which is define by parameter T-18, open the doors and waiting with opened doors until deactivated input <b>FI-312</b>, then start normal travel.</p> <p><i>While the function <b>FI-312</b> is activated, elevator don't accept landing and cabin calls.</i></p> </div> </div>																										
T-18	Drv NORM 2454-2 * 100ms / *10mm	0-100																								
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">  </div> <div style="width: 65%;"> <p>Defining times / descent time in the zone test.          (For the absolute positioning type - descent is T-18 x 10 mm)          (For other positioning type – descent length was determined by the T-18 x 100 ms)</p> </div> </div>																										

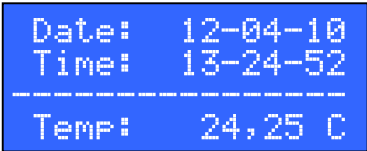
## 5. LC100 menu

LC100 menu has 7 submenus like shown on the picture:



## 5.1 Date/time

5/6 LC100	1/7 Date/time
-----------	---------------



In the date/time menu the time is set, it is also possible to monitor the processor temperature.

Date format is xx-yy-zz, where the:

- xx is day
- yy is month
- zz is year

Clock format is aa-bb-cc, where the:


- aa is hour
- bb is minute
- cc is second

After entering the menu setting is done by pressing the enter button. Changes are made with up, down, left or right button.

Saving the changes is done by pressing the enter button.

## 5.2 Info

5/6 LC100	2/7 Info
-----------	----------



Info menu shows the current software version installed at LC100-C board.



## 5.3 Test mode

5/6 LC100	3/7 Test mode
<pre> Test mode:  1/6 Montage drive ----- **OFF**      &lt; &gt; </pre>	<p>For elevator testing there is possible to change the 4 drive modes:</p> <p><b>1/6 Montage drive</b> – Switches on the montage drive.</p> <p>Montage drive presents driving the elevator without the cabin connection box (only with the control cabinet in the machine room). If there is no cabin board LC100-K connected there is „Comm err with –K“ error – communication error with the LC100-K board. In that case elevator is in service drive because the input for service is on the „K“ board. Switching on the montage drive inputs on the „K“ board are ignored and the drive is possible with the recall buttons from the machine room.</p> <p>Switching off the montage drive is always when power down the LC100-C board. Also montage drive is switched automatically after there is communication with the cabin board (connecting the LC100_K board to CAN communication bus).</p> <p>It is possible to switch the montage drive through the digital input.</p>
<pre> Test mode:  2/6 Drive 1 &lt;-&gt; A-1 ----- **OFF**      &lt; &gt; </pre>	<p><b>2/6 Drive 1 &lt;-&gt; A-1</b> – Switches on the automatic drive only to first and the last floors.</p>
<pre> Test mode:  3/6 Drive N &lt;-&gt; N-1 ----- **OFF**      &lt; &gt; </pre>	<p><b>3/6 Drive N &lt;-&gt; N+1</b> – Switches on the automatic drive with floor to floor drive. Elevator drives only one floor at a time..</p>
<pre> Test mode:  4/6 NO OPEN doors ----- **OFF**      &lt; &gt; </pre>	<p><b>4/6 NO OPEN doors</b> – Switches on the automatic drive without the door managing function. Elevator is working normally but the doors are not opened.</p>
<pre> Test mod:    5/6 UCM (A3)    UP ----- **OFF**      &lt; &gt; </pre>	<p><b>5/6 UCM (A3) UP</b> – Switches on the automatic field test of UCM safety device. Elevator must be in the floor. After starting the test elevators opens the doors and starts levelling in up direction. After exit the floor zone switches safety device must stop the elevator with the error UCM (A3). Reset can be done only with the reset button on the LC100-D keypad.</p>
	<p><b>6/6 UCM (A3) DOWN</b> – Identical as the test UP but in down direction.</p>

## 5.4 Memory

5/6 LC100	4/7 Memory
<pre> MEMORY STATUS: ----- A=0000H-&gt;  D=0AH __0001H-&gt;  D=01H </pre>	<p>Factory parameter for monitoring the values of internal memory.</p>

## 5.5 Reset

5/6 LC100

5/7 Reset

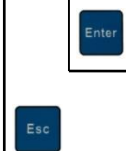
```

RESET
-----
statistics 1/4
  
```

In the reset menu it is possible to reset statistics, counters and parameters.

After entering the menu type of reset is chosen by pressing left or right button. After choosing the reset, press enter button, then press left or right and confirm with the enter button.

After reset there is a message „\*RESET FINISHED\*“



```

RESET STATISTICS
-----
<>
  
```

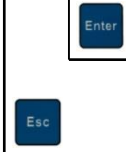
```

RESET STATISTICS
-----
yes=ENTER no=ESC
  
```

Reset statistics erases all data in **STATISTICS** menu.

```

RESET
-----
COUNTERS AB 2/4
  
```



```

RESET COUNTERS A
-----
<>
  
```

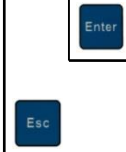
```

RESET COUNTERS A
-----
yes=ENTER no=ESC
  
```

Reset counters A sets all counters in the **COUNTERS** menu to 0.

```

RESET
-----
COUNTERS US 3/4
  
```



```

RESET COUNTERS U
-----
<>
  
```

```

RESET COUNTERS U
-----
yes=ENTER no=ESC
  
```

Reset counters U sets **USER** counter to 0.

```

RESET
-----
parameters 4/4
  
```

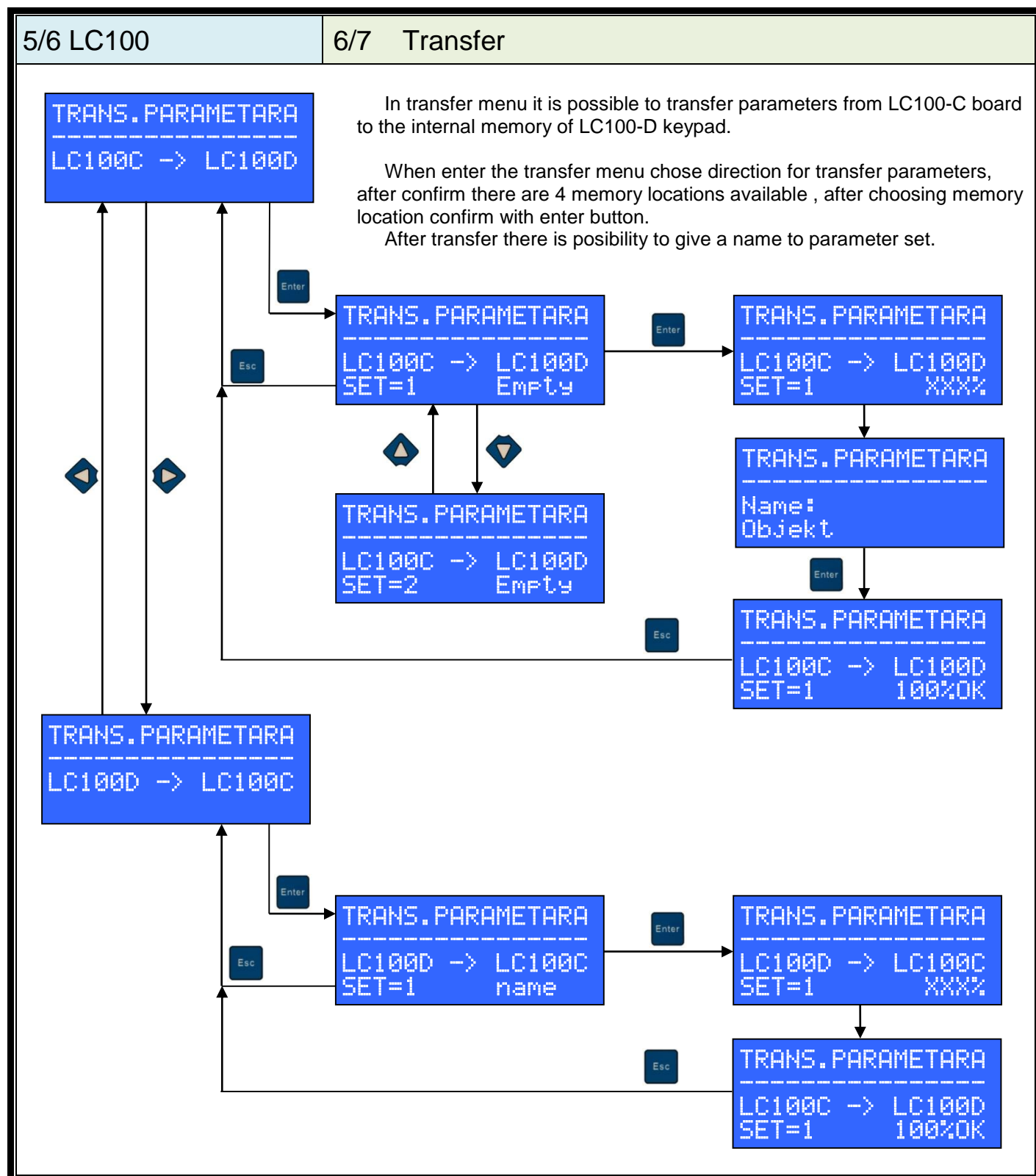
Parameter reset sets all parameters to factory value. After confirming the parameter reset it is needed to choose which factory set of parameters to use.

After choosing the set confirm with enter button and message „\*RESET FINISHED\*“ appears.

Parameters for each factory set are shown in the „**STANDARD CONFIGURATIONS OF PARAMETER**“

Factory sets are different only in the drive type (type C) and configurations (type N) parameters. Other parameters must be set manually (number of stops, doors, positioning... ).

## 5.6 Transfer

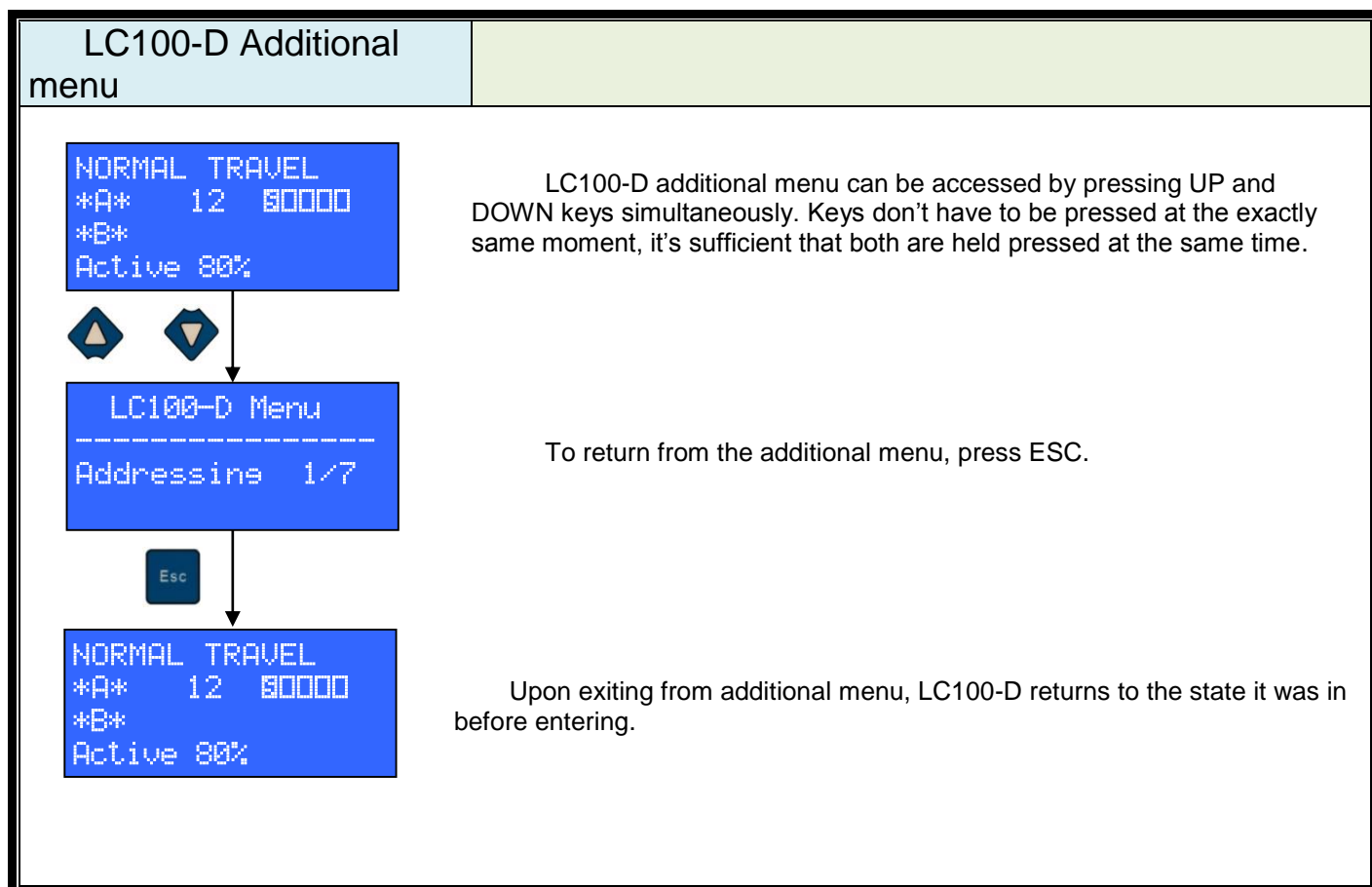


## 6. LC100-D ADDITIONAL MENU

### 6.1 General

In addition to the regular menus described in the main User Guide, LC100-D has an additional menu for the following purposes:

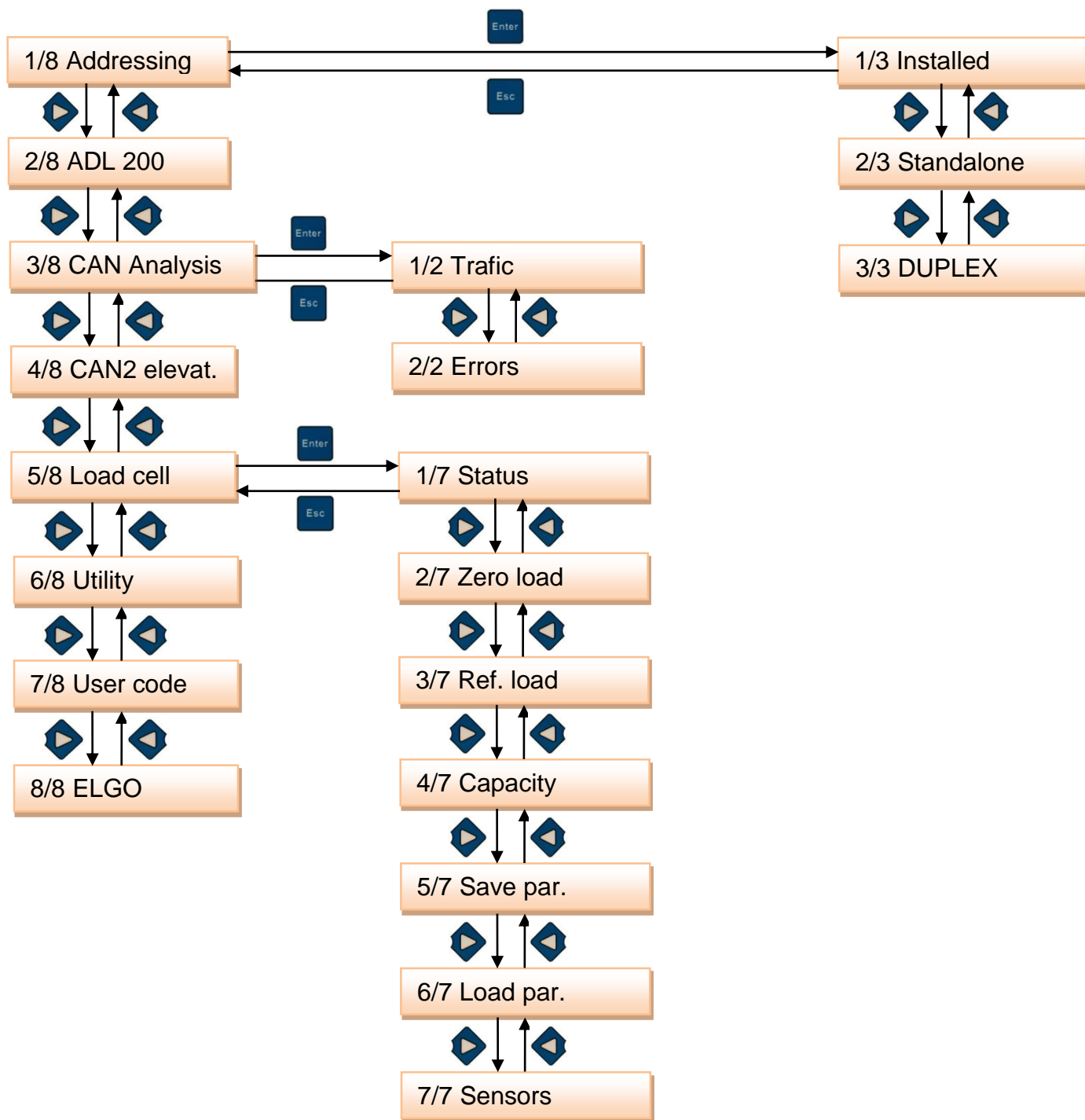
- LC100-M5, LC100-M6 and LC100-M7 module addressing
- CAN bus traffic analysis
- Elevator selection (if LC100-D is connected to CAN2 bus)
- Load sensor calibration and settings




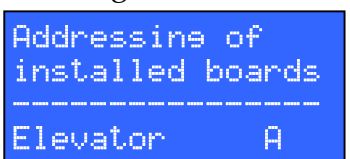
There are two situations, other than the one described, in which LC100-D is going to enter the additional menu:


- When LC100-D is connected to the CAN2 bus, elevator selection menu will be brought up automatically.
- When LC100-D is connected to a CAN bus where no LC100-C is present, the additional menu root will be brought up automatically. This behavior is useful for addressing signalization modules without connecting them to an elevator or analyzing CAN traffic on a bus that has no LC100-C connected to it e.g. standalone signalization module.

## 6.2 Additional menu structure



## 6.3 LC100-M5/M6/M7 addressing

1/8 Addressing	1/2 Installed
<p>Multiple elevators</p>  <p>Single elevator</p> 	<p>First addressing mode is used for signalization modules that are already installed and connected to a LC100-C module. Signalization modules are addressed for one elevator at a time. Therefore, it's first necessary to select an elevator whose signalization modules are to be addressed. Picture on the left depicts LC100-D screen for elevator A.</p> <p>If there are multiple elevators connected to the CAN2 bus, LC100-D will draw arrows next to selected elevator designator, indicating that it's possible to select other elevators using LEFT and RIGHT keys. If there is only one elevator, no arrows will be drawn.</p> <p>With the elevator chosen, the next step is to drive that elevator to a stop whose signalization module is to be addressed. Then, by pressing call pushbutton the signalization module whose pushbutton has been pressed is assigned to the selected elevator in the current stop. If the selected elevator has front and rear doors, each press of the call pushbutton will alternate between door A and door B.</p> <p>By pressing and holding RESET key for more than 3 seconds, all signalization modules will be reverted to the default address (stop 0 i.e. cab indicator).</p> <p>After exiting the menu all of the signalization modules will save their assigned addresses, so no further action from the user is required.</p>

1/8 Addressing	2/2 Standalone
	<p>Second addressing mode is used when, for any one reason, the first mode is impossible to use or is considered impractical e.g. the elevator cannot drive at the moment or the signalization modules aren't connected to an elevator at all. First step is to select an address which is to be assigned to a signalization module, by pressing UP, DOWN, LEFT and RIGHT keys accordingly. Number next to address represents stop number, first letter represents elevator selection (A, B, C or D) and the third letter represents door selection (A or B). When the address is set, pressing a call pushbutton on a signalization module will assign the selected address to that module. Signalization modules automatically save their new address when call pushbutton is pressed, so no further action from the user is required.</p> <p>By pressing and holding RESET key for more than 3 seconds, all signalization modules will be reverted to the default address (stop 0 i.e. cab indicator).</p> <p>Image on the left shows LC100-D screen when stop 12, elevator B and landing door A is selected.</p>

## 1/8 Adresiranje

## 3/3 DUPLEX



Third way of addressing is for DUPLEX elevators with one button connected to both displays.

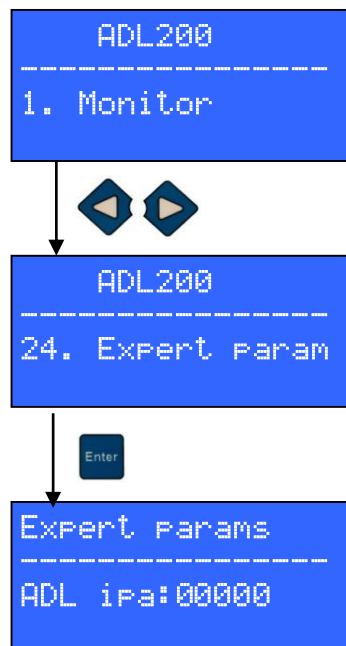
Choosing the wanted address is done with up, down, left and right button. When pressing the pushbutton one display will be for the „A“ elevator, other one will be for „B“ elevator. When pressing pushbutton again they will change elevator address.

As long as LC100-D is in any one of the addressing modes, all of the connected dot-matrix signalization modules will display their assigned address via two interchanging screen images. One of them displays stop number and the other one displays two characters, left one representing elevator assignment (A, B, C or D), and the right one representing landing door assignment (A or B).

## 6.4 ADL 200 parameters

## 2/8 ADL200

## ADL parameters



In ADL 200 menu it is possible to change parameters in frequency inverter. Inverter must be connected to CAN communication.

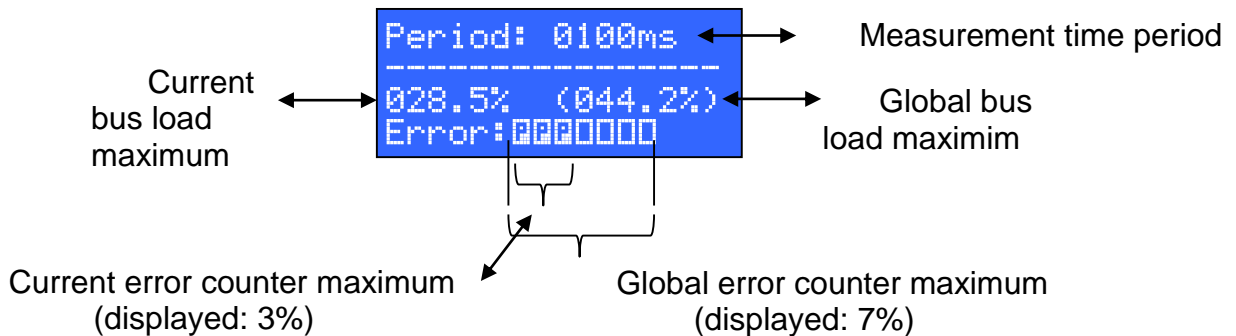
Parameter description are given in ADL200 user manual.



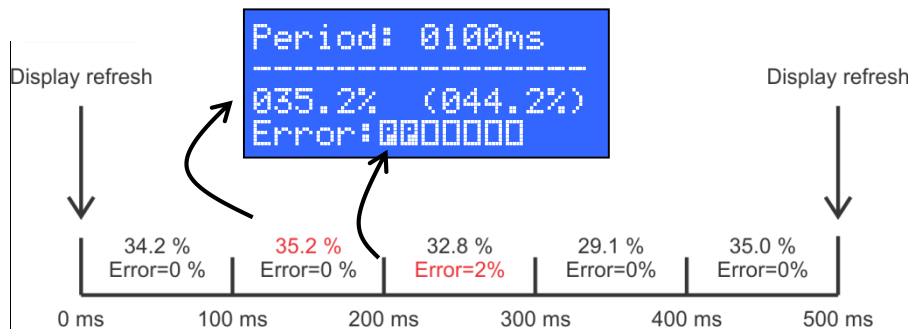
## 6.5 CAN bus traffic analysis

## 3/8 CAN Analysis

## 1/2 Traffic



- Traffic analysis menu displays CAN bus load and transfer error number.
- Two types of data are displayed: global and current.
- **Current data** are refreshed every 500ms.
- **Global data** are updated only when a current value is bigger than an existing global value. **Global data can be reset by pressing the RESET key**
- CAN bus load is a percentage of measurement time period during which the CAN bus is busy transmitting messages.
- Error counter is an error message percentage out of total number of messages transmitted during measurement time period. Every and symbol represents 1%.
- symbol represents global error counter maximum, and symbol represents current error counter maximum.
- Measurement time interval can be changed by pressing UP and DOWN keys (from 10ms to 5000ms).
- Display refresh period is fixed to 500ms. Therefore, it's obvious that for measurement time periods shorter than that multiple measurement periods will pass between two screen refreshes. In that case display will be updated with biggest values from the ones available.



- Expected CAN bus load values vary with number of connected LC100 modules and selected measurement time period. In general, the values measured during the short time periods will be greater than ones measured during longer time periods. Reason for that lies in combination of random distribution of messages in time and described measurement results display method. Therefore, it's considered normal for bus load to temporarily go up to 100% for short measurement time periods (10, 20 and 50 ms).
- Current error counter value of 2% or less is not considered problematic.
- Constantly present current error counter value of 5% or more indicates a serious electrical problem on the CAN bus.

## 3/8 CAN Analysis

## 1/2 Errors

```
Board select
-----
Searchina...
```

```
Board select
-----
LC100-M5  03/07
011A1A
```

Enter

```
LC100-M5  011A1A
-----
1. REC      003
2. TEC      000↓
```



```
LC100-M5  011A1A
-----
2. TEC      000↑
3. Stuff    007↓
```

Upon entering error analysis menu, LC100-D searches the CAN bus for connected LC100 modules. Modules must have **firmware version 4.00 or newer** in order to be able to transfer their error counters.

After the search is finished, LC100-D will display a menu containing all of the connected modules (image shows an example of LC100-M5 module, addressed for 1. stop, elevator A and door A). Module can be selected by pressing LEFT and RIGHT keys (provided that there is more than one module). By pressing ENTER key, LC100-D will enter selected modules' error counter menu.

Error counter menu displays error counter values which can be listed through by pressing UP and DOWN keys. There are 7 values in total:

1. REC – CANREC
2. TEC – CANTEC
3. Stuff – bit stuffing error counter
4. Form – form error counter
5. Ack – ACK error counter
6. Bit – bit error counter
7. CRC – CRC error counter

Error types description can be found in the CAN bus specification.

CANREC and CANTEC counters display the current values of the CAN counters from the modules' CAN controller. Other counters accumulate values until they are reset to zero by pressing REEST key.

## 6.6 CAN2 bus elevator select

## 4/8 CAN2 Side

```
CAN2 side select
-----
A  B  D
  ↑  ↑  ↑
  Present Chosen
elevators elevator
```

```
CAN2 side select
-----
No elevators
present on CAN2!
```

Present elevators      Chosen elevator

- CAN2 side select menu can be used to connect LC100-D to an elevator via CAN2 bus.
- Menu shows elevators present on the CAN2 bus in real time
- If there are no elevators connected to the CAN2 bus message like the one on the right picture is displayed.
- Elevator can be selected by pressing LEFT and RIGHT keys.
- To connect to the selected elevator user has to press the ENTER key. After the key press, LC100-D will exit the CAN2 side menu and display chosen elevator's main menu.

## 6.7 Load measurement

## 5/8 Load cell

```

Load Cell
-----
Status      1/7
033 % (0150 kg)

```

```

Load Cell
-----
Status      1/7
Not Calibrated

```

```

Load Cell
-----
Status      1/7
Load cell absent

```

## 1/7 State

The status screen displays current cab load in kilograms and in percentage of rated capacity.

If load measurement system isn't calibrated, message "Not Calibrated" is displayed.

If the load measurement system isn't operational, message "Load cell absent" is displayed. There are multiple possible reasons for this state:

- Module LC100-V isn't connected to LC100-K
- Module LC100-V faulty
- Module LC100-K isn't connected to the elevator
- Module LC100-K faulty

## 5/8 Load cell

```

Load Cell
-----
Zero load   2/7
Not defined

```

Esc

Enter

```

Zero load set
-----
Unload the cab
and press ENTER

```

Enter

```

Zero load set
-----
Sucessfull!

```

## 2/7 Zero load

Zero load menu is used to calibrate load measuring system to an empty cab. If zero load calibration is not already done, "Not defined" message is displayed. Zero load calibration procedure can be started by pressing ENTER key.

The cab should be unloaded now and ENTER key should be pressed to commence with zero load calibration.

After key press, LC100-D will display the outcome of the zero load calibration ("Successful" or "Communication error").

After successful zero load calibration, LC100-D will return to the load cell menu and display "Defined" as the zero load status.

```

Load Cell
-----
Zero load   2/7
Defined

```

Enter

Esc

```

Value is already
defined!
Update?
ESC=No ENTER=Yes

```

Enter

```

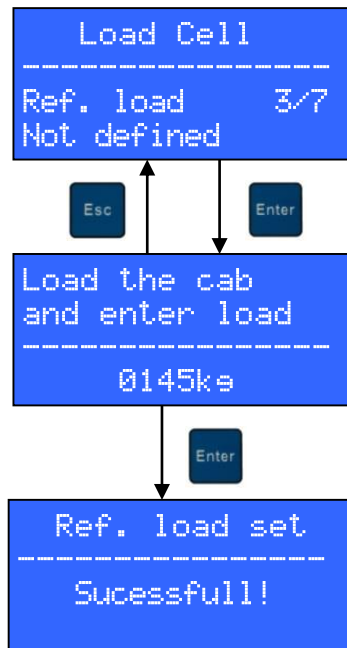
Zero load set
-----
Unload the cab
and press ENTER

```

If zero load value is set and user tries to redefine it, a warning will be displayed. Pressing the ENTER button dismisses the warning and proceeds with the calibration process.

## 5/8 Load cell

## 3/7 Ref. load

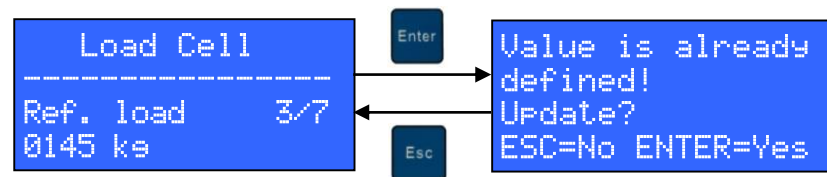


Ref. load menu is used to calibrate load measuring system to a known load. If known load calibration is not already done, "Not defined" message is displayed. Known load calibration procedure can be started by pressing ENTER key.

The cab should be loaded uniformly with a known weight now. Load weight in kilograms should be entered using UP, DOWN, LEFT and RIGHT keys. Known load calibration will commence upon pressing the ENTER key.

After key press, LC100-D will display the outcome of the known load calibration ("Successful" or "Communication error").

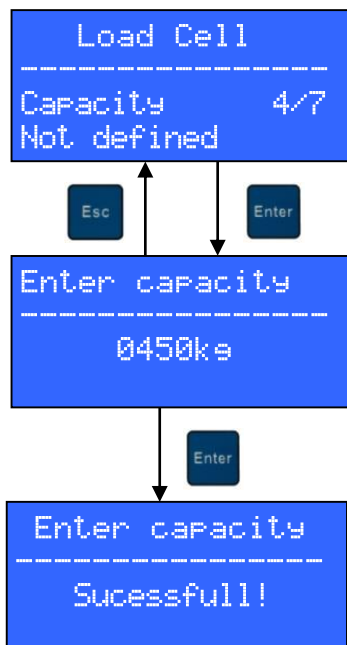
After successful known load calibration, LC100-D will return to the load cell menu and display load weight as the known load status.



If known load value is set and user tries to redefine it, a warning will be displayed. Pressing the ENTER button dismisses the warning and proceeds with the calibration process.

## 5/8 Load cell

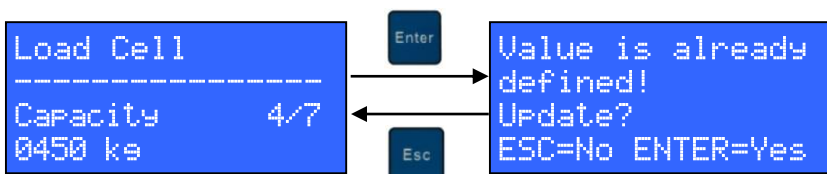
## 4/7 Capacity set



Rated capacity menu is used to define rated capacity of an elevator. If rated capacity is not already defines, "Not defined" message is displayed. Rated capacity can be defined by pressing the ENTER key.

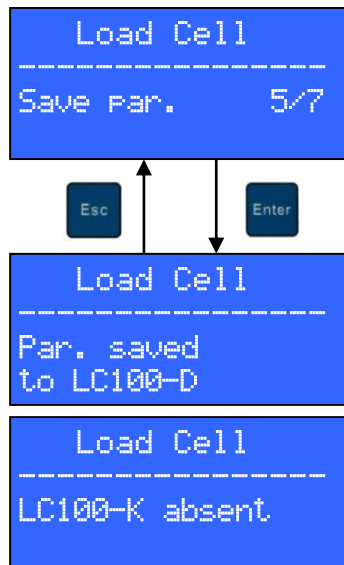
Rated capacity in kilograms should be entered using UP, DOWN, LEFT and RIGHT keys. Rated capacity is confirmed by pressing the ENTER key.

After key press, LC100-D will display the outcome of the rated capacity definition ("Successful" or "Communication error").



If rated capacity value is set and user tries to redefine it, a warning will be displayed. Pressing the ENTER button dismisses the warning and proceeds with the calibration process

## 5/8 Load cell



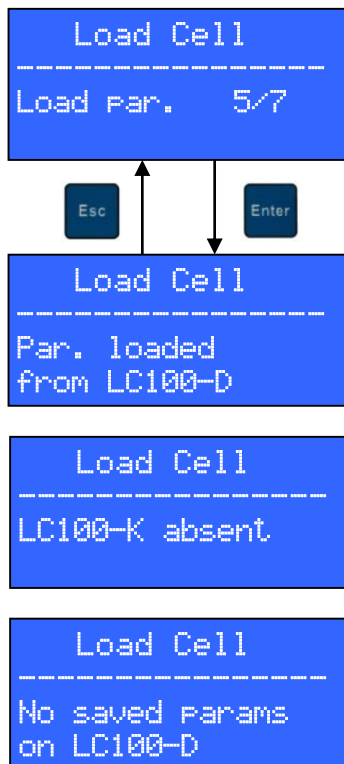
## 5/7 Save par.

“Save parameters” and “Load parameters” menus can be used to temporarily store load measurement system parameters on the LC100-D and restore them at a later time, if LC100-K module has to be replaced (similar to “Parameter transfer from LC100-C to LC100-D”). There is no need to save parameters to LC100-D in any other situation.

If parameter saving is successful, “Par. Saved to LC100-D” message is displayed.

If parameter saving fails (e.g. because of communication error), “LC100-K absent” message is displayed.

## 5/8 Load cell



## 6/7 Load par.

“Save parameters” and “Load parameters” menus can be used to temporarily store load measurement system parameters on the LC100-D and restore them at a later time, if LC100-K module has to be replaced (similar to “Parameter transfer from LC100-C to LC100-D”). There is no need to save parameters to LC100-D in any other situation.

If parameter loading is successful, “Par. Saved to LC100-D” message is displayed.

If parameter loading fails (e.g. because of communication error), “LC100-K absent” message is displayed.

If there are no load measurement system parameters previously saved on LC100-D, and user tries to load parameters, “No saved params on LC100-D” message is displayed.

## 5/8 Load cell

```

Input1 =-00244
Input2 =+00127
Input3 =+00000
Input4 =+00000
  
```

## 7/7 Sensors

“Sensors” menu shows direct AD conversion results from each of the four LC100-V analog inputs and is used to troubleshoot sensor problems.

## 6.7 Utility

### 6/8 Utility

```
Periph. modules
-----
Per.addr: 000
doesen't exist
```

Utility menu is used as as a service menu. Trough utility menu it is possible to change some system parameters which are not a part of standard menu.

For accessing the boards address must be put as follows:

1- LC100-K, 2-LC100-E0, 3-LC100-E1, 4-LC100-I, 5-LC100-J, 6-Reserved, 7-LC100-B...

**IMPORTANT!!**

**For changing the parameters in utility menu contact MLC electronic technical department.**

## 6.8 User code

### 7/8 User code

User code menue is used for coding the LC100 boards. How to code the system is explained in „User Code manual“.

## 6.9 ELGO

### 8/8 ELGO

ELGO menu is used for setting the absolute possitioning system. How to set the parameters is explained in „absolute possitioning system manual“.

## APPENDIX 1. POSITIONING

Positioning of the elevator implies to following the car position in the elevator shaft. In order to know the right position magnetic sensors (monostabil and bistabil) and inductive switch are used.

According to the configuration, type of elevator (electric, hydraulic) and speed of the elevator there are 5 types of positioning system which is set through parameter **E-01**.

With any type of positioning elevator always goes to first drive after switching the power on, switching from inspection drive to normal drive, or switching from recall to normal drive. When using positioning type 1-3 first drive is only in one direction (adjustable through parameter **E-02**) while when using positioning type 4 or 5 first drive direction is to down floor and then up to the last floor.

In the first drive elevator slows down when reaching the referent switch (up or down), same is in the normal drive, while slowing down for other floors is counting sensor switch or the impulse from the inductive switch depending on the positioning type.

### **Positioning type 1:**

It is used for one speed elevators. Two bistables are used for final floors, and monostable switch for stopping in the floor level.

### **Positioning type 2:**

It is used for two speed elevators (regulated or not regulated). It is usually used when the deceleration distance is higher than  $\frac{1}{2}$  of the floor to floor distance.

Two bistables are used for final floors, one monostable switch for stopping in the floor, and two monostables for counting the floors and slowing down. Slowing down for first and the last floor is referent switch and for other floors slowing down is counting switch up or down according to direction of travel.

### **Positioning type 3:**

It is used for two speed elevators (regulated or not regulated). It is usually used when the deceleration distance is lower than  $\frac{1}{2}$  of the floor to floor distance.

Two bistables are used for final floors, one monostable switch for stopping in the floor and one bistable switch for counting the floors and slowing down. Slowing down for first and the last floor is referent switch and for other floors slowing down is counting switch.

### **Positioning type 4:**

It is used for two speed elevators (regulated or not regulated). It is used when having annular gear on the overspeed governor or frequency inverter with close loop connected to CAN.

Two bistables are used for final floors, one monostable switch for stopping in the floor or optical sensor, and inductive switch on the overspeed governor. Slowing down for first and the last floor is referent switch and for other floors slowing down is impulse information from the inductive switch.

### **Positioning type 5:**

It is used with frequency regulated elevators with two high speeds when the speed is so high that when driving from floor to floor there is not enough space to accelerate to nominal speed before slowing down. In that case positioning 5 is used and the speed between two floors is lower than nominal speed of the elevator.

Two bistables are used for final floors for high speed, and two bistables for lower speed, one monostable switch for stopping in the floor and inductive switch on the overspeed governor.

Slowing down for first and the last floor is referent switch and for other floors slowing down is impulse information from the inductive switch.

First drive is done with lower speed in down direction and up direction. In normal drive speed from floor to floor is lower while when driving two or more floors speed is nominal.



**Table of switches according to positioning type:**

	RDD FI-250 XK6.1	RDG FI-252 XK6.2	BG FI-254 XK6.4	BD FI-255 XK6.5	ZUSG FI-256 XK6.7	RDD2 FI-251 XK6.4	RDD2 FI-253 XK6.5	ZUSD FI-257 XK6.8	ZONA FI-258 XK6.9
E01=1	BIST.	BIST.			MON/OPT				
E01=2	BIST.	BIST.	MONO	MONO.	MON/OPT				
E01=3	BIST.	BIST.	BIST.		MON/OPT				
E01=4	BIST.	BIST.			MON/OPT				
E01=5	BIST.	BIST.			MON/OPT	BIST.	BIST.		
D28=1 or C18=1, 2	Connect switches according to the positioning type +							MON/OPT	MON/OPT

E-01=positioning type

D-28=preopening the doors

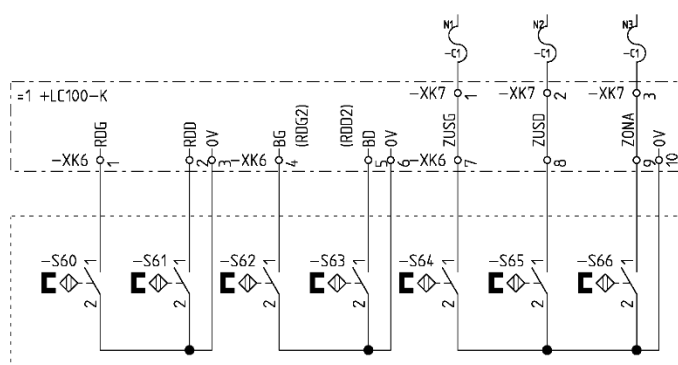
C-18=relevelling

BIST.=bistabile magnetic switch

MON=monostabil magnetic switch (NO or NC)

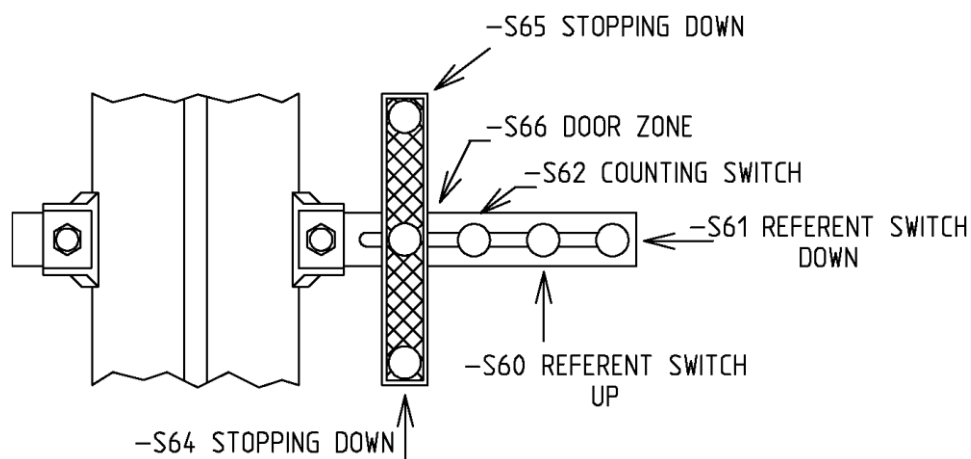
OPT=optical sensor

Connecting the positioning switches:

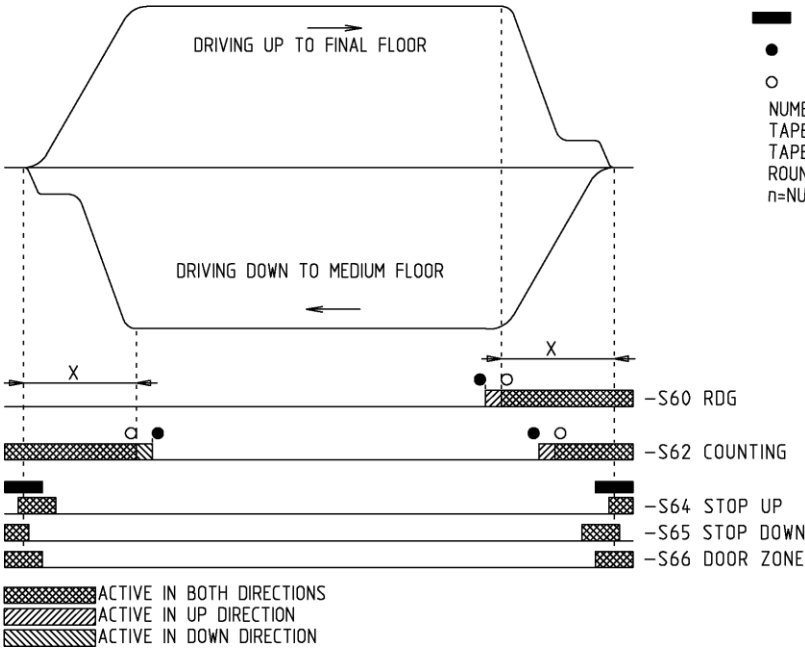


- S60 UPPER REFERENCE SWITCH
- S61 LOWER REFERENCE SWITCH
- S62 COUNTING UP OR UPPER REFERENCE SWITCH 2
- S63 COUNTING DOWN OR LOWER REFERENCE SWITCH 2
- S64 STOPPING UP
- S65 STOPPING DOWN
- S66 STOPPING ZONE

Magnetic switch position :



Magnetic switches status in drive:

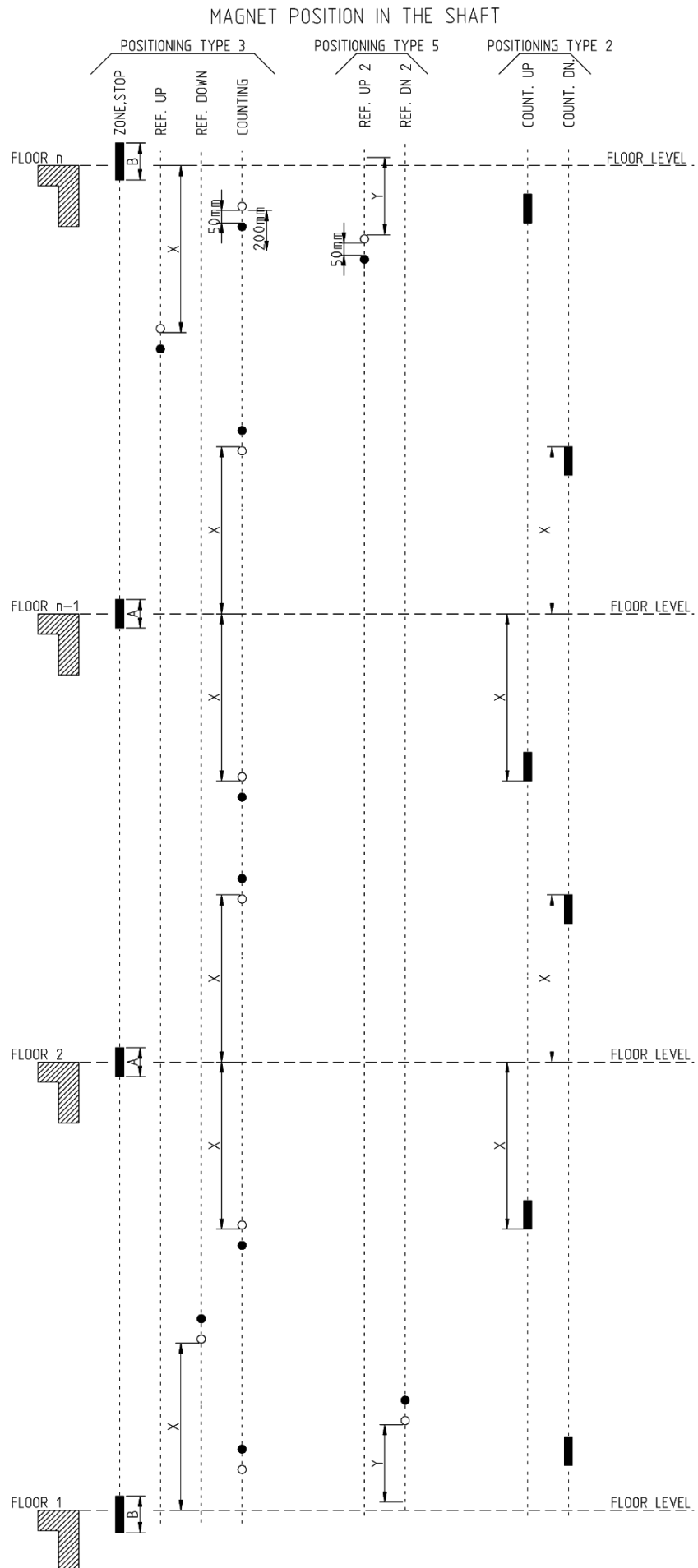


- MAGNETIC TAPE x2 (PUT ONE TO ANOTHER TO BOOST MAGNETIC FIELD)
  - ROUND MAGNET BLACK SIDE
  - ROUND MAGNET WHITE SIDE
- NUMBER OF MAGNETS:  
TAPE LONG A: (n-2) PCS  
TAPE LONG B: 2 PCS  
ROUND MAGNET: (nx4) PCS  
n=NUMBER OF FLOORS

SLOW DOWN DISTANCE (X) AND SIZE OF THE STOPPING MAGNET (A, B) DEPENDS ON TYPE AND SPEED OF THE ELEVATOR.

EXAMPLE FOR FREQUENCY REGULATED ELEVATOR  
STOPPING MAGNETS SIZE FOR FINAL FLOORS B=A+50mm

ELEVATOR SPEED [m/S]	X [mm] DECELER. LENGHT	A [MM] STOP MAGNET
0.5	450	100
0.6	600	100
0.8	1000	100
1	1200	100
1.2	1400	100
1.4	2600	100
1.6	3200	100
2	3800	100



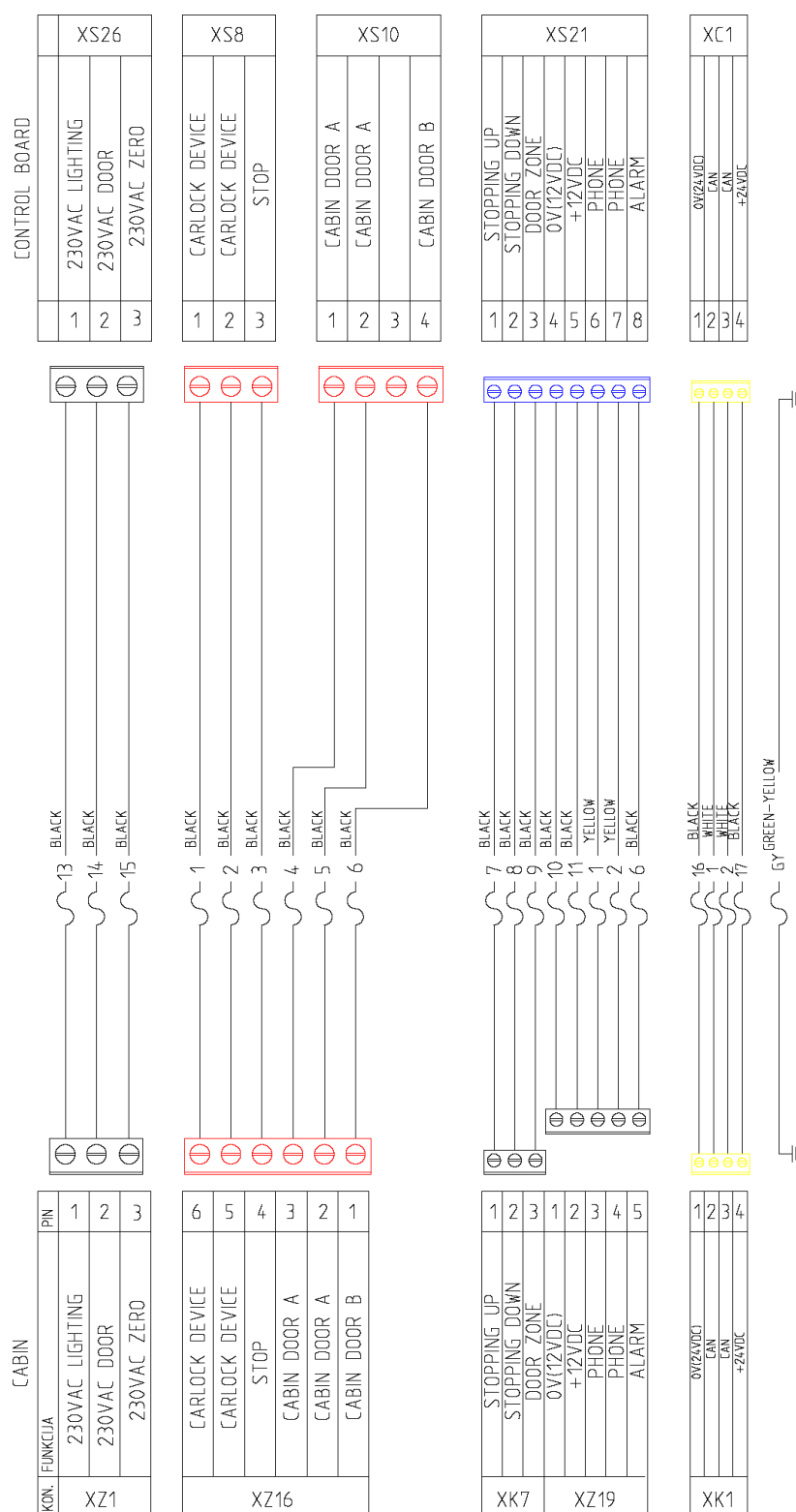
## APPENDIX 2. TRAVELING CABLE CONNECTION

While installing the LC100 elevator system standard prewired traveling cable is used. Connectors are on both side of the cable.

Traveling cable consist of 22 wires, 0,75mm<sup>2</sup> intersection.

Traveling cable structure:

- 18 black wires numbered from 1. to 18.
- 2 white wires numbered 1. and 2. in steel shell.
- 2 yellow wires numbered 1. and 2. In steel shell.



## APPENDIX 3. CONNECTING THE CAN AND CAN BUS TERMINATION

In order to have communication on the CAB bus „**CAN BUS TERMINATION**“ must be done.

Without CAN bus termination system is not working.

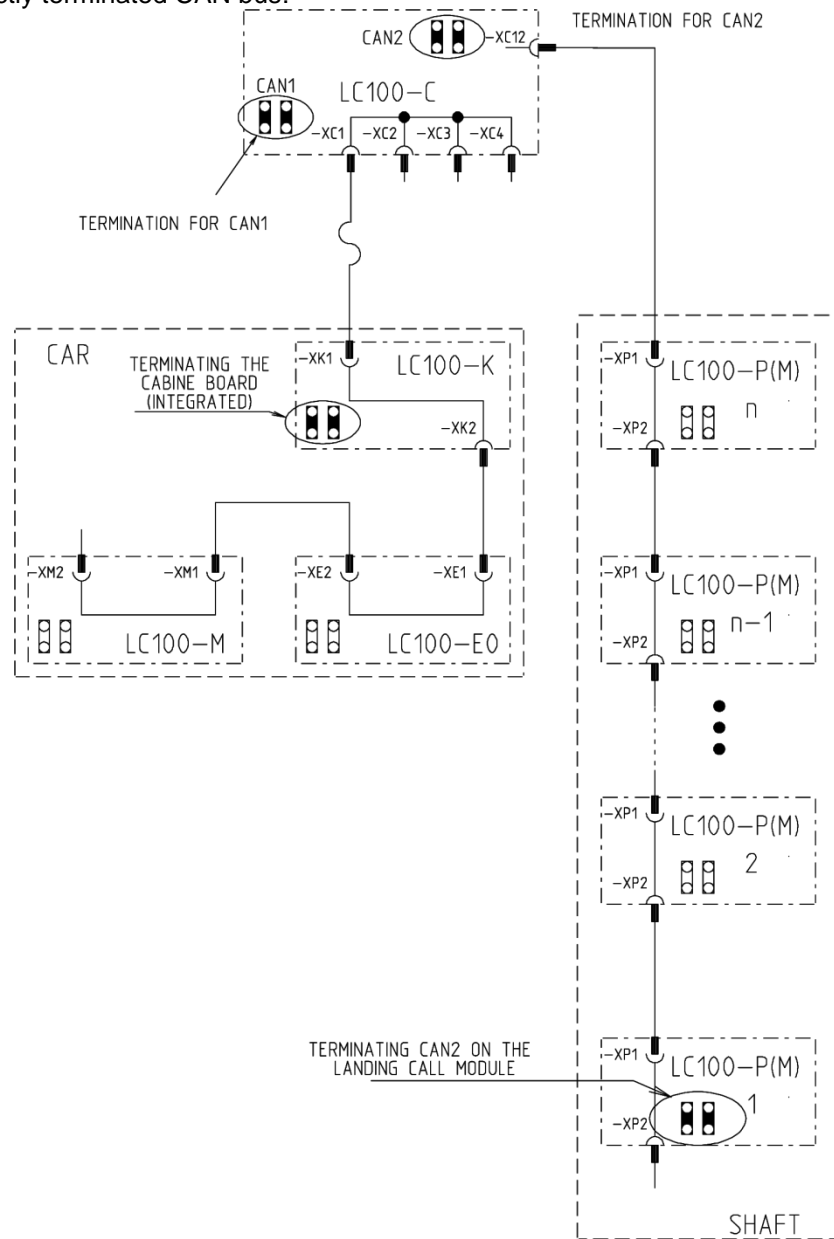
CAN bus termination is done by putting the jumpers to the places on the boards on which the termination is done (LC100-C, LC100-E, LC100-I, LC100-P or M).

LC100-K board has implemented CAN bus termination.

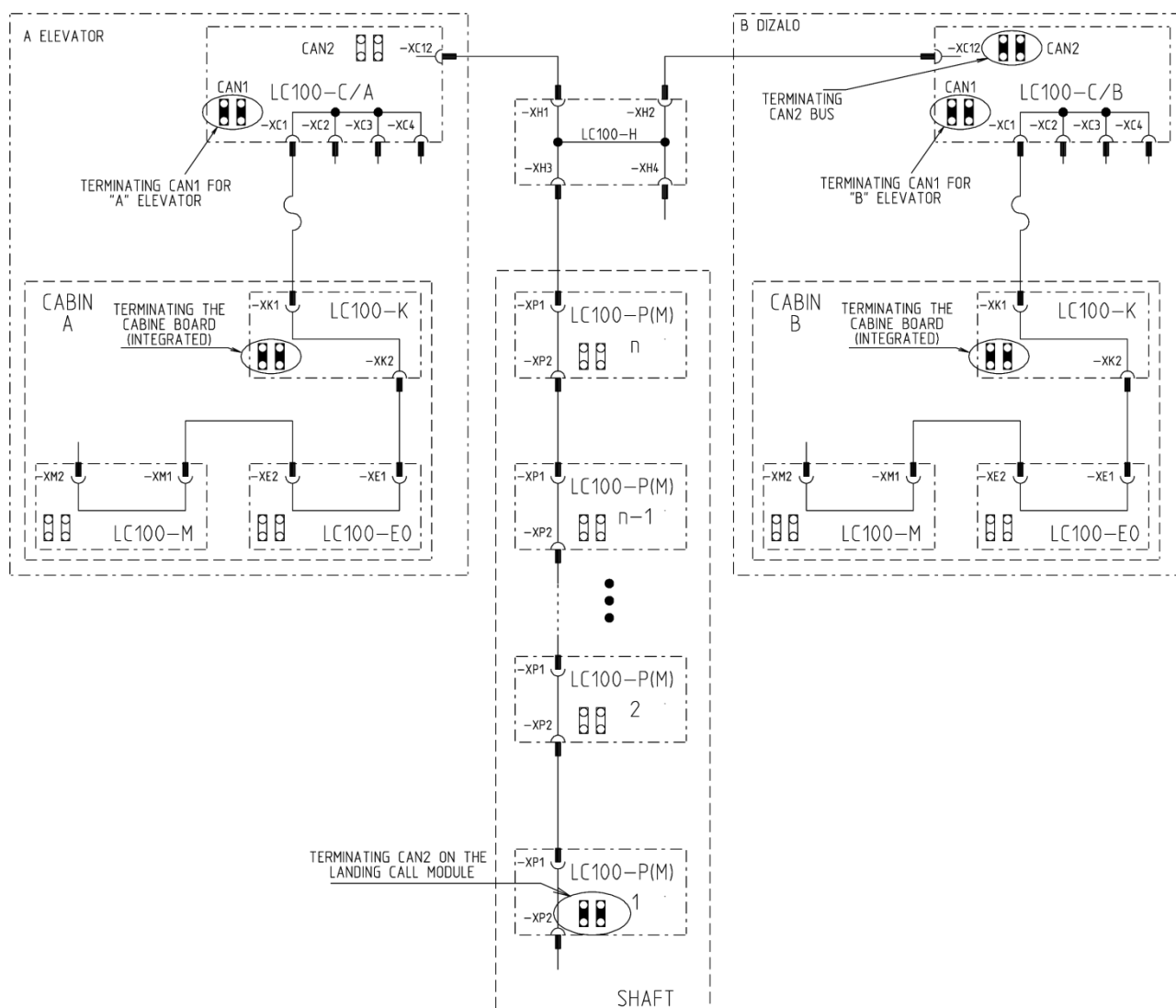
**Correctly** terminated CAN bus means that the termination is done on both ends of the CAN communication bus. On simplex elevators termination is done on the LC100-K (integrated) and on the LC100-C board for CAN 1 communication and for the landing calls (CAN2) termination is done on the LC100-C board and the farthest landing call module (LC100-P or M).

When the CAN bus is correctly terminated resistance between CAN\_L and CAN\_H line has to be cca 68Ω (between pins XC1.2 and XC1.3)

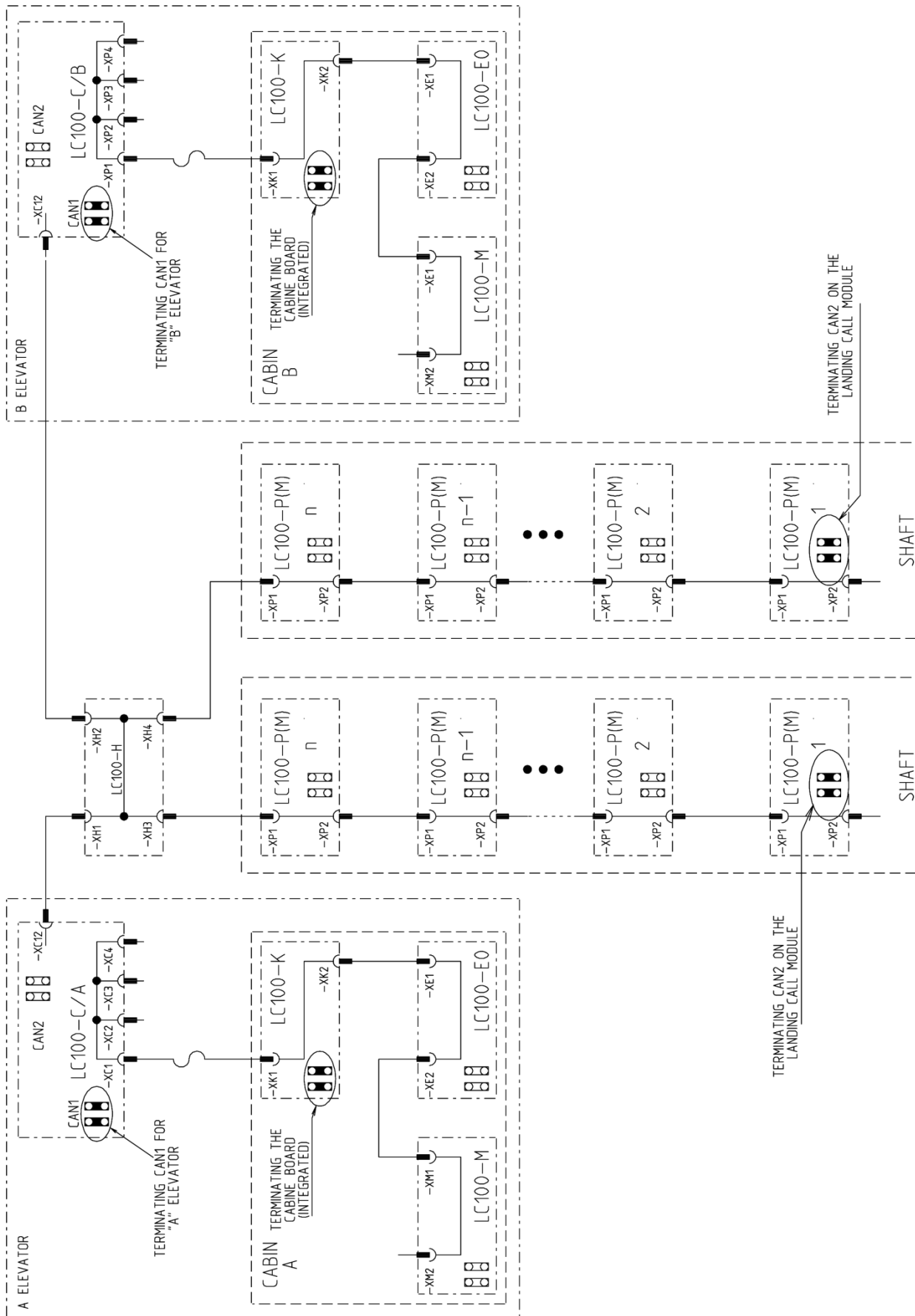
Examples of correctly terminated CAN bus:



Picture 21 Terminating the CAN on SIMPLEX elevators



Picture 12 Terminating the CAN bus on DUPLEX elevators





## APPENDIX 4. STANDARD CONFIGURATIONS OF PARAMETERS

Standard parameter sets after factory reset:

Typ.	Parameter	Description	Range	Factory settings				
				INIT	VVF-AD	HID-YD	AC2-T1	User:
GENEGAL TYPE A	A-1	Number of stops	2-40	12				
	A-2	Number of elevators	1-8	1				
	A-3	Elevator marking	A-H	A				
	A-4	Evacuation program	0-2	0				
	A-5	Config LC100-I	I	---				
	A-6	Config LC100-K	K,FC,FD	K				
	A-7	Config LC100-E0	E0,FC,FD	E0				
	A-8	Config LC100-E1	E1,FC,FD	---				
	A-9	Config LC100-P, M, L	A, B	A				
CALL PROCESSING TYPE B	B-1	Type call processing	0-4	1				
	B-2	New call time	0-25 s	3 s				
	B-3	Program multiplex	1-2	1				
	B-4	Program A/B side	0-1	0				
	B-5	Program lift boy	0-1	0				
	B-6	Main stop	1-A1	1				
	B-7	Fire stop zone 1	0-A1	0				
	B-8	Fire stop zone 2	0-A1	0				
	B-9	Fire stop zone 3	0-A1	0				
	B-10	Fire stop zone 4	0-A1	0				
	B-11	False calls erasing	0-A1	0				
	B-12	Parking program type	1-2	1				
	B-13	Parking stop 1	0-A1	0				
	B-14	Time for parking 1	0-41:40min	2:00 min				
	B-15	Parking stop 2	0-A1	0				
	B-16	Time for parking 2	0-41:40min	2:00 min				
MAIN DRIVE TYPE C	C-1	Main drive type	1-4	2	3	4	2	
	C-2	Starting sequence	VMRPI	---	---	---	---	
	C-3	Nominal speed	VMRPI	---	V	---	---	
	C-4	Stopping speed	VMRPI	---	---	---	---	
	C-5	Service speed	VMRPI	---	M	---	---	
	C-6	Leveling speed	VMRPI	---	P	---	---	
	C-7	Medium speed	VMRPI	---	VM	---	---	
	C-8	Time for starting sequence	0-2,5 s	0	0	---	---	
	C-9	Time OFF motor contactor	0-25 s	0	0	---	---	
	C-10	Time ON brake contactor	0-2,5 s	0	0	---	---	

Typ.	Parameter	Description	Range	Factory settings				
				INIT	VVF-AD	HID-YD	AC2-T1	User.
MAIN DRIVE TYPE C	C-11	Time OFF brake contactor	0-2,5 s	0	0	---	---	
	C-12	Time low brake voltage	0-25 s	2 s	2 s	---	2 s	
	C-13	Main drive fan working time	0-250 s	30 s	30 s	30 s	30 s	
	C-14	Starting time for motor pump	0-25 s	---	---	2 s	---	
	C-15	Service speed direction	0-1	---	---	0	0	
	C-16	Time ON valve up	0-2,5 s	---	---	0	---	
	C-17	Additional time for pump	0-2,5 s	---	---	0	---	
	C-18	Releveling program	0-2	0	0	2	---	
	C-19	Additional time for releveling	0-2,5 s	0	0	0	---	
DOORS TYPE D	D-1	Type of car door	0-2	1				
	D-2	Door A side for floors 1-8	1-8	---				
	D-3	Door A side for floors 9-16	9-16	---				
	D-4	Door A side for floors 17-24	17-24	---				
	D-5	Door A side for floors 25-32	25-32	---				
	D-6	Door A side for floors 33-40	33-40	---				
	D-7	Door B side for floors 1-8	1-8	---				
	D-8	Door B side for floors 9-16	9-16	---				
	D-9	Door B side for floors 17-24	17-24	---				
	D-10	Door B side for floors 25-32	25-32	---				
	D-11	Door B side for floors 33-40	33-40	---				
	D-12	Orders for door A	ABCDEF	AC				
	D-13	Opening time door A	0-25 s	4 s				
	D-14	Type of landing doors A	0-3	1				
	D-15	Open door A for floors 1-8	1-8	---				
	D-16	Open door A for floors 9-16	9-16	---				
	D-17	Open door A for floors 17-24	17-24	---				
	D-18	Open door A for floors 25-32	25-32	---				
	D-19	Open door A for floors 33-40	33-40	---				
	D-20	Nalozi vrata B	ABCDEF	AC				
	D-21	Opening time door B	0-25 s	4 s				
	D-22	Type of landing doors B	0-3	1				
	D-23	Open door B for floors 1-8	1-8	---				
	D-24	Open door B for floors 9-16	9-16	---				
	D-25	Open door B for floors 17-24	17-24	---				
	D-26	Open door B for floors 25-32	25-32	---				
	D-27	Open door B for floors 33-40	33-40	---				
	D-28	Preopening doors	0-1	0				
	D-29	Delay for preopening	0-2,5 s	0 s				
	D-30	Standard exit time at stop	0-25 s	5 s				

Typ.	Parameter	Description	Range	Factory settings				
				INIT	VVF-AD	HID-YD	AC2-T1	User.
DOOR TYPE D	D-31	Waiting time after photocell	0-25 s	2 s				
	D-32	Waiting time after new call	1-25 s	1 s				
	D-33	Door deceleration time	0-25 s	1 s				
	D-34	Door reversing time	0-2,5 s	0,05 s				
	D-35	Door resistors time	0-25 s	0 s				
	D-36	Door locking time	0-2,5 s	0,3 s				
POSITIONING TYPE E	E-1	Positioning type	1-5	3				
	E-2	Learning drive direction	0-1	0				
	E-3	Decelerating zone correction	0-250imp	0 imp				
	E-4	Preopening speed	0-100imp/s	0 imp/s				
	E-5	Stop delay in UP drive	0-2,5 s	0 s				
	E-6	Stop delay in DOWN drive	0-2,5 s	0 s				
	E-7	Short floor distance 1-8	1-8	---				
	E-8	Short floor distance 9-16	9-16	---				
	E-9	Short floor distance 17-24	17-24	---				
	E-10	Short floor distance 25-32	25-32	---				
	E-11	Short floor distance 33-40	33-40	---				
TYPE F	F-X	Stopping delay for x floor	2-2,55 s	0 s				
	Stopping delay is factory set to 0 s, user sets it for each floor on the building							
TYPE G	G-X	Marking for the floor		1, 2, 3, 4, 5, 6 .... 37, 38, 39, 40				
	Factory seting is from 1 to 40							
TIME TYPE H	H-1	Car fan type	1-2	1				
	H-2	Working time for car fan	0-250s	30 s				
	H-3	Car light type	1-2	1				
	H-4	Working time for car fan	0-250s	30 s				
	H-5	OFF time for shaft light	0-250s	60 s				
	H-6	Programabile relay T1	---	---				
	H-7	Programabile relay T2	---	---				
	H-8	GONG/UNLOCK time	0-2,55s	0,03 s				
	H-9	DOOR UNLOCK time	0-25s	0 s				
	H-10	PHOTOCELL time	0-250s	20 s				
	H-11	DOOR OBSTACLE time	0-250s	30 s				
	H-12	STOP signal time	0-41:40min	3:20 min				
	H-13	LADNING DOOR signal time	0-41:40min	10:00 min				
PROT. TYPE I	I-1	PTC resistance in cold state	0-9999Ω	700Ω				
	I-2	PTC resistance im hot state	0-9999Ω	1620Ω				
	I-3	Max. drive in normal travel	0-250s	20 s				

Typ.	Parameter	Description	Range	Factory settings				
				INIT	VVF-AD	HID-YD	AC2-T1	User.
PROTECTION TYPE I	I-4	Max. drive in low speed	0-250s	20 s				
	I-5	Max. drive time in releveling	0-250s	20 s				
	I-6	Max. drive in evacuation	0-250s	120 s				
	I-7	Max. time for door opening	0-25s	10 s				
	I-8	Max. time for door closing	0-25s	10 s				
	I-9	Max. time for locking door	0-25s	3 s				
	I-10	Temp. for switch off panel	0-85°C	0°C				
	I-11	Temp. for switch on panel	0-85°C	0°C				
	I-12	Temp. for panel fan on	0-85°C	50°C				
	I-13	Temp. for panel fan off	0-85°C	40°C				

Typ.	Board	Pin	Description	Factory settings				
				INIT	VVF-AD	HID-YD	AC2-T1	User.
CONFIGURATIONS TYPE N	LC100-C	XC5.1	Programabile input	0	FI-225 NO	FI-228 NO	FI-223 NO	
		XC5.2	Programabile input	0	FI-226 NO	FI-227 NO	FI-222 NO	
		XC5.3	Programabile input	0	FI-224 NO	FI-220 NO		
		XC5.4	Programabile input	0	---	FI-221 NO		
		XC5.5	Programabile input	0	FI-209 NO			
		XC5.6	Programabile input	0	FI-207 NO		---	
		XC5.7	Programabile input	0	FI-205 NO		---	
		XC5.8	Programabile input	0	---	---	---	
		XC5.9	Programabile input	0	---	---	---	
		XC5.10	Programabile input	0	FI-210 NC			
		XC6.1	Programabile input	FI-201 NC				
		XC6.2	Programabile input	FI-202 NO				
		XC6.3	Programabile input	FI-203 NO				
		XC8.1	Programabile input	0	FI-208 NO	FI-242 NC	FI-208 NO	
		XC10.1	Programabile output	0	FO-01			
		XC10.2	Programabile output	0	FO-02			
		XC10.3	Programabile output	0	FO-03	FO-13	FO-03	
		XC10.4	Programabile output	0	FO-04			
		XC10.5	Programabile output	0	FO-12	---	F0-12	
		XC10.6	Programabile output	0	FO-18	FO-21	FO-18	
		XC10.7	Programabile output	0	FO-10	---	---	
		XC10.8	Programabile output	0	FO-32			

Typ.	Board	Pin	Description	Factory settings				
				INIT	VVF-AD	HID-YD	AC2-T1	User.
CONFIGURATIONS TYPE N	LC100-K	XK4.1	Programabile input	0	FI-242 NO (CAR LOAD 100%)			
		XK4.2	Programabile input	0	FI-241 NO (CAR LOAD 80%)			
		XK4.3	Programabile input	0	FI-240 NO (CAR LOAD 50%)			
		XK5.1	Programabile input	FI-235 NC (INSPECTION DRIVE)				
		XK5.2	Programabile input	FI-236 NO (INSPECTION DRIVE UP)				
		XK5.3	Programabile input	FI-237 NO (INSPECTION DRIVE DOWN)				
		XK6.1	Programabile input	0	FI-250 NO (REFERENT SWITCH UP)			
		XK6.2	Programabile input	0	FI-252 NO (REFERENT SWITCH DOWN)			
		XK6.4	Programabile input	0	FI-254 NO (COUNTING)			
		XK6.5	Programabile input	0				
		XK6.7	Programabile input	0	FI-256 NO (STOPPING UP)			
		XK6.8	Programabile input	0		FI-257 NO	0	
		XK6.9	Programabile input	0		FI-258 NO	0	
		XK9.1	Programabile output	FO-51 INV (CAR LIGHT)				
		XK9.2	Programabile output	FO-50 NOR (CAR FAN)				
		XK9.3	Programabile output	FO-40 NOR (OPEN DOOR A)				
		XK9.4	Programabile output	FO-41 NOR (CLOSE DOOR A)				
		XK9.5	Programabile output	FO-53 INV (ALARM ENABLE)				
		XK9.6	Programabile output	0				
		XK9.7	Programabile output	0				
		XK9.8	Programabile output	0				
		XK10.1	Programabile input	0				
		XK10.2	Programabile input	0				
		XK10.3	Programabile input	0	FI-262 NO (OBSTACLE DOOR A)			
		XK10.6	Programabile input	0	FI-263 NO (PHOTOCELL DOOR A)			
		XK11.1	Programabile input	0				
		XK11.2	Programabile input	0				
		XK11.3	Programabile input	0				
		XK11.6	Programabile input	0				
	LC100-E0	XE3.1	Programabile input/output	0	FA-401 (CABIN CALL 1 A)			
		XE3.2	Programabile input/output	0	FA-402 (CABIN CALL 2 A)			
		XE3.3	Programabile input/output	0	FA-403 (CABIN CALL 3 A)			
		XE3.4	Programabile input/output	0	FA-404 (CABIN CALL 4 A)			
		XE3.5	Programabile input/output	0	FA-405 (CABIN CALL 5 A)			
		XE3.6	Programabile input/output	0	FA-406 (CABIN CALL 6 A)			
		XE3.7	Programabile input/output	0	FA-407 (CABIN CALL 7 A)			
		XE3.8	Programabile input/output	0	FA-408 (CABIN CALL 8 A)			

Typ.	Board	Pin	Description	Factory settings				
				INIT	VVF-AD	HID-YD	AC2-T1	User.
	LC100-E0	XE4.1	Programabile input/output	0	FA-409 (CABIN CALL 9 A)			
		XE4.2	Programabile input/output	0	FA-410 (CABIN CALL 10 A)			
		XE4.3	Programabile input/output	0	FA-411 (CABIN CALL 11 A)			
		XE4.4	Programabile input/output	0	FA-412 (CABIN CALL 12 A)			
		XE4.5	Programabile input/output	0	FA-561 (CAR FAN PUSHBUTTON)			
		XE4.6	Programabile input/output	0	FI-264 NO (OPEN DOOR A)			
		XE4.7	Programabile input/output	0	FI-265 NO (CLOSE DOOR A)			
		XE4.8	Programabile input/output	0	FI-243 NO (PRIORITY DRIVE)			

Typ.	Parameter	Description	Range	Factory settings				
				INIT	VVF-AD	HID-YD	AC2-T1	User.
TYPE P	P-00	Config for P or M module	---	A, B, D, F, G				
	P-01	Config for P or M module	---	A, B				
	P-xx	Config for P or M module	---	A				
	P-00 –setting for cabin signalization module, P-xx –setting for landing signalization module							
FACTORY TYPE T	T-01	Standard	1-3	1				
	T-02	Time for starting inverter	0-25s	5s				
	T-03	Main supply contactor delay	0-25s	5s				
	T-04	UPS suply contactor delay	0-25s	5s				
	T-05	Motor contactor delay	0-2s	1s				
	T-06	Next service day	1-31	0				
	T-07	Next service month	1-12	0				
	T-08	Next service year	0-99	0				
	T-09	Monitor type	0/1	1				

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[illegible]



MLC ELECTRONIC D.O.O.  
PUŠKARIĆEVA 104B  
HR-10250 ZAGREB  
CROATIA

**T** +385 (0) 1 6548 085  
**F** +385 (0) 1 6548 086  
**E** [MLC@MLC.HR](mailto:MLC@MLC.HR)  
**W** [WWW.MLC.HR](http://WWW.MLC.HR)

authorized distributor: