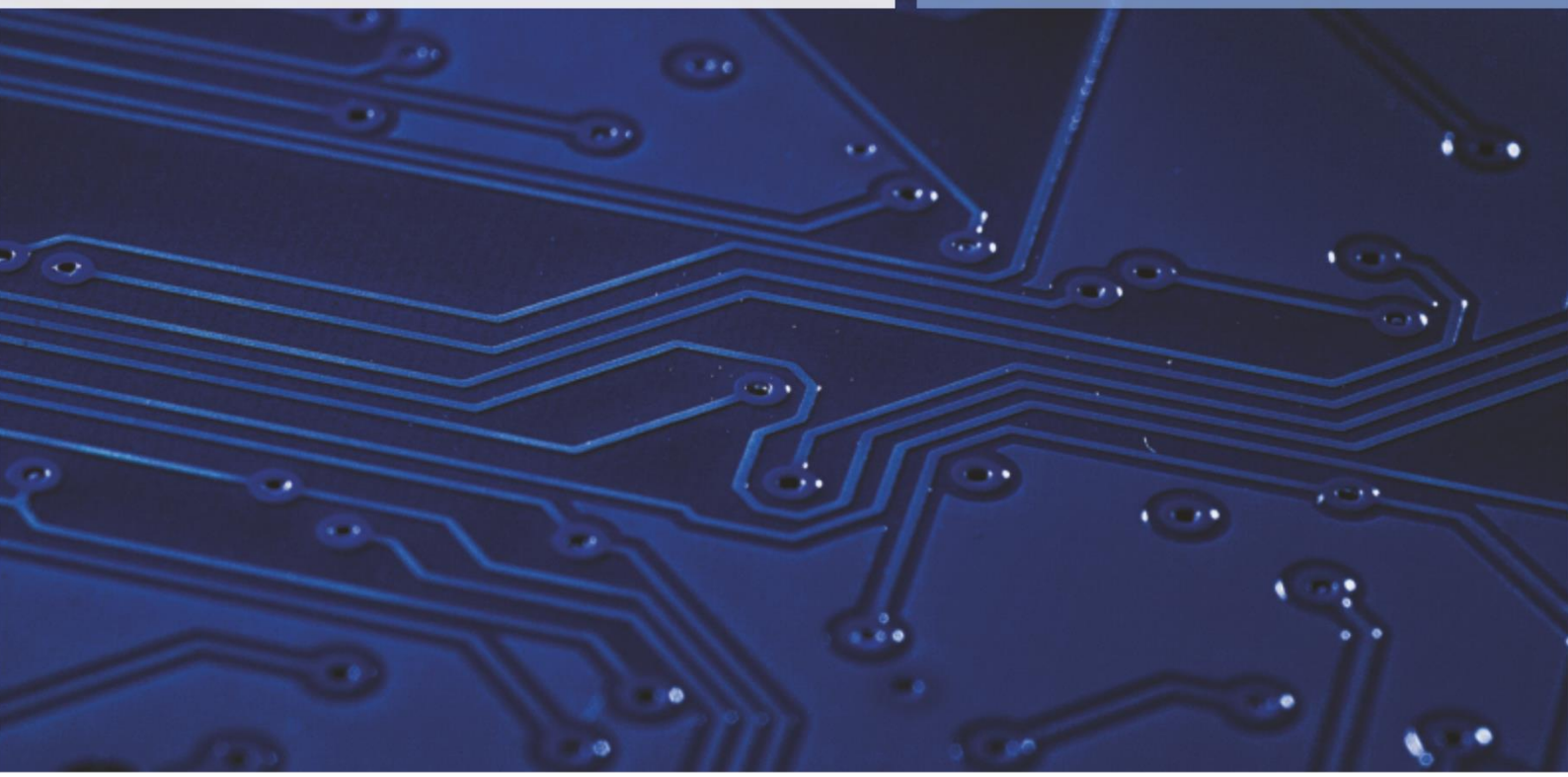
LC 100

CAN bus microprocessor elevator system

user manual



MLC
ADVANCED ELEVATOR SOLUTIONS

making technology simple

LC100 Manual
Revision: 10.0.0g
Release date: 04.11.2025.

Contents

1. General 5
2. LC100 boards description 7
2.1 LC100-C main control unit 7
2.2 LC100-C2 main control unit 10
2.3 LC100-K cabin I/O board 12
2.4 LC100-K2 cabin I/O board 13
2.5 LC100-K3 cabin I/O board 14
2.6 LC100-S safety circuit board 15
2.7 LC100-SR safety circuit board 20
2.1 LC100-SR2 safety circuit board 21
2.2 LC100-E input-output unit for cabin calls 22
2.3 LC100-E2 in/out board 24
2.4 LC100-E3 cabin I/O board 26
2.5 LC100-E3.1 cabin I/O board 28
2.6 LC100-E4 cabin I/O board 29
2.7 LC100-E5 cabin I/O board 30
2.8 LC100-E6 cabin/landing I/O board 32
2.9 LC100-F in/out board 33
2.10 LC100-D control terminal 34
2.11 LC100-D2 control terminal 35
2.12 LC100-Z cabin connection board 36
2.13 LC100-R relay board with 4 relays 39
2.14 LC100-T relay board with 8 relays 40
2.15 LC100-I IN/OUT board 41
2.16 Boards for landing calls and signalization 43
2.16.1 LC100-M5 dot matrix display 43
2.16.2 LC100-M5 Rev.E dot matrix display 44
2.16.3 LC100-M6 dot matrix display 45
2.16.4 LC100-M6 Rev.E dot matrixd display 46
2.16.5 LC100-M7 segment display 47
2.16.6 LC100-M3 horizontal dot matrix display 48
2.16.7 LC100-M8 horizontal dot matrix display 49
2.16.8 LC100-M8 Rev.E horizontal dot matrix display 50
2.16.9 LC100-L1 TFT display 51
2.16.10 LC100-L2 TFT display 52
2.16.11 LC100-L3 TFT display 53
2.17 Adressing the landing call units (LC100-M boards) 54
2.18 LC100-J input/output board 55
2.19 LC100-V load measurement board 57
2.20 LC100-V2 load measurement board 58
2.21 LC100-V3 load measurement board 59
2.22 LC100-B CAN bridge board 60
2.23 LC100-VFD - CAN bridge bord, relay output, phase control bord 61
2.24 LC100-VFX - CAN bridge bord, relay output, phase control, safety circuit board 62
2.25 LC100-KZ - cabin board 63
2.26 LC100-DB – safety circuit bridging board 64

2.27 LC100-H CAN connection board 65
2.28 LC100-GSM emergency voice call 66
2.29 LC100-HF handsfree voice communication 67
3. Managment with LC100-D2 terminal 68
3.1 Basic view 68
3.1.1 Basic elevator state 69
3.1.3 Current elevator station display 69
3.1.4 Safety line and drive display 70
3.1.5 Active delays and errors display 71
3.2 Menu structure 83
3.2.1 Statistics 84
3.2.1 Statistics ***In firmware 4.437.14 or newer.*** 85
4. Parameters 94
4.1 General - Type A 95
4.2 Call processing – Type B 98
4.3 Main drive - Type C 103
4.4 Doors - Type D 109
4.5 Positioning - Type E 116
4.6 Stopping - Type F 124
4.7 Lift markings - Type G 124
4.8 Timers - Type H 125
4.9 Protection - Type I 130
4.10 Configurations - Type N 134
OUTPUT FUNCTION TABLE 135
INPUT FUNCTIONS TABLE 140
CABIN CALLS SIDE A TABLE 145
CABIN CALLS SIDE B TABLE 145
4.11 P-M-L Modul - Type P 147
4.12 Factory - Type T 148
5. LC100 menu 154
5.1 Date/time 155
5.2 Info 155
5.3 Test mode 156
5.4 Memory 158
5.6 Transfer 160
6. LC100-D ADDITIONAL MENU 164
6.1 General 164
6.2 Aditional menu structure 165
6.3 LC100-M5/M6/M7 addressing 166
6.4 ADL 200/300 parameters 167
6.5 CAN bus traffic analysis 168
6.6 CAN2 bus elevator select 169
6.7 Load measurement 170
6.7 Utility 173
6.8 User code 173
6.9 ABS POSITION SYSTEM 173
APPENDIX 1. POSITIONING 174
APPENDIX 2. TRAVELING CABLE CONNECTION 180
APPENDIX 3. CONNECTING THE CAN AND CAN BUS TERMINATION 181

APPENDIX 4. ANTS SAFE PROCEDURE 184
6.8 Introduction 184
6.9 Parameter checking 184
6.10 Setup procedure 185
6.11 Parameter description 186
6.12 Resetting the system 189
7. Document version history 191

1. General

LC100 is a microprocessor control system for elevators for up to 40 stops and 8 elevators in multiplex mode. 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 a travel speed of 4m/s.

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

The system is mainly produced with SMT technology (surface mounting technology).
The system is designed with low power consumption components. All boards have passed several tests: electrical test of printed boards before assemby, 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
EN 81-20, EN81-50, EN81-21

Basic features:

- Universal program for all types of installations with the possibility of complete user adjustment with a LCD mobile terminal, personal computer or through the internet.
- Applicability to all known types of elevator drives (adaptability to different control systems of power plants), different types and variants of doors and passing cabins.
- A short stop distances, releveling, door preopening, several types of parking, multiple fire zones, loading and unloading of the building, priority drive.
- Different modes of call processing, with emphasis on energy saving and energy consumption management for the elevators lightning and ventilation systems.
- Connection of multiple modules a with robust industrial plug & play system designed to decrease possible mistakes, during the mounting phase, to a minimum with a simple addressing system of modules.
- Universal traveling cable for all types of installations, prewired for easy connecting (Plug & Play).
- Multiple systems of cabine positioning and shaft location information.
- Cabine load measurement.
- Monitoring of engine and control cabinet temperatures.
- Landing correction for each floor.
- Parameter selection for signalization and floor designations.
- More than 100 parametric timers for various applications.
- Real time fault readings and statistics.
- Reduced board and component sizes allow for a small footprint of the control cabinet with a width of 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/C2 - Main control board
LC100-DB – safety circuit bridging board
LC100-K/K2/K3 - Cabin input-output board
LC100-S - Safety circuit controlling board
LC100-VFD – CAN bridge, relay output, phase control board
LC100-VFX – CAN bridge, relay output, phase control, input/output, phase control board
LC100-KZ – cabin board
LC100-Z - Cabin connection board with emergency power supply 12VDC
LC100-I - Shaft input-output board
LC100-B/B2 - CAN bridge board
LC100-M3, M4, M5, M6, M8 - Landing call unit with dot matrix floor indicator
LC100-L1, L2, L3 -Landing call unit with LCD display
LC100-M7 - Landing call unit with seven segment floor indicator
LC100-G - Monitoring connection board

LC100-GSM, HF – Monitorning connection board,
LC100-R, T - Relay board with 4 relays (R) and 8 relays (T)
LC100-E,E2,E3,E4,E5,E6,J - Input-output board
LC100-F - Aditional in-out board (16 I/O)
LC100-V,V2, V3 - Weight measurement board
LC100-PL – emergency power supply board.

2. LC100 boards description

2.1 LC100-C main control unit

LC100-C is the central control system board of the LC100 system. In addition to processing input and output information, management and storage of system parameters, the board also has the function of communicating between peripheral I / O boards. Communication between different parts of the system is achieved via CAN communication. The system has two independent CAN channels. One is used for CAN communication with the boards on a simplex mode level, and the other for connection of the landing call boards for multiplex modes 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 5V. Input voltage (24 VDC) is transmitted directly from connectors XC1 trough to XC4, and across a diode to the XC12 connector for connecting the landing call boards in multiplex mode. All connectors are different colors and pitches.

Main functions:

- 2 independent CAN bus channels.
- 14 programmable optocoupler inputs with LED status indicators.
- 6 optocoupler inputs for connecting the LC100-S safety circuit board.
- 8 programmable digital outputs.
- Input option for the connection of an inductive sensor (NPN) that is used in certain types of elevator positioning.
- Analog input for PTC probe, resistance measurement with parametric adjustable tripping resistances.
- Real-time clock with battery supply.
- Measurement of ambient temperatures with adjustable operating ranges.

.

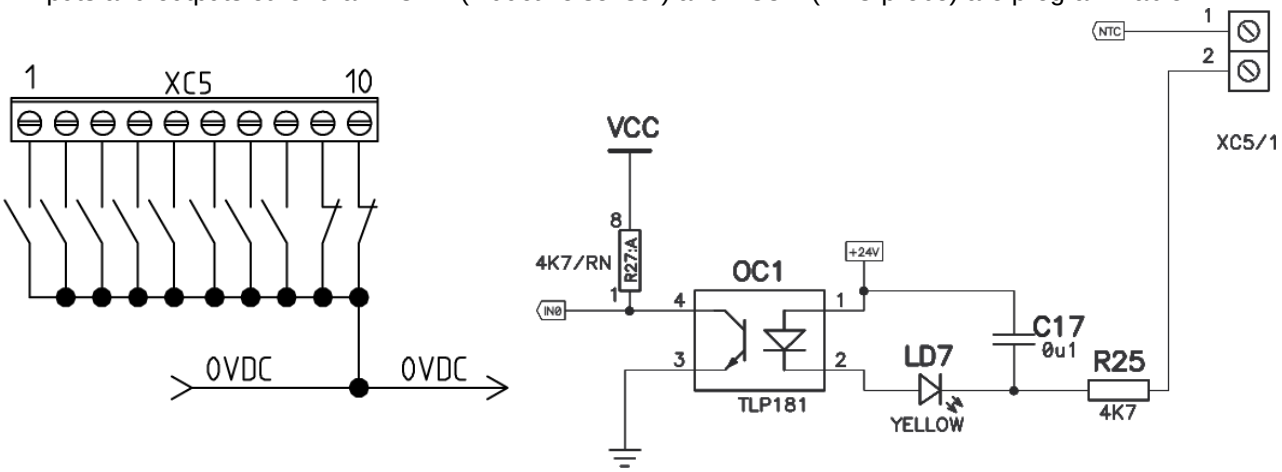
Pin XC8:2 on the input connector XC8 is used for the connection of a PTC sensor and has the ability to customize the level of tripping resistance via the parameters I-01 and I-02.

Pin XC7: 1 on the input connector XC7 is used for the connection of a NPN type inductive sensor used for elevator positioning.

All digital inputs are optocouplers with a LED status indication.

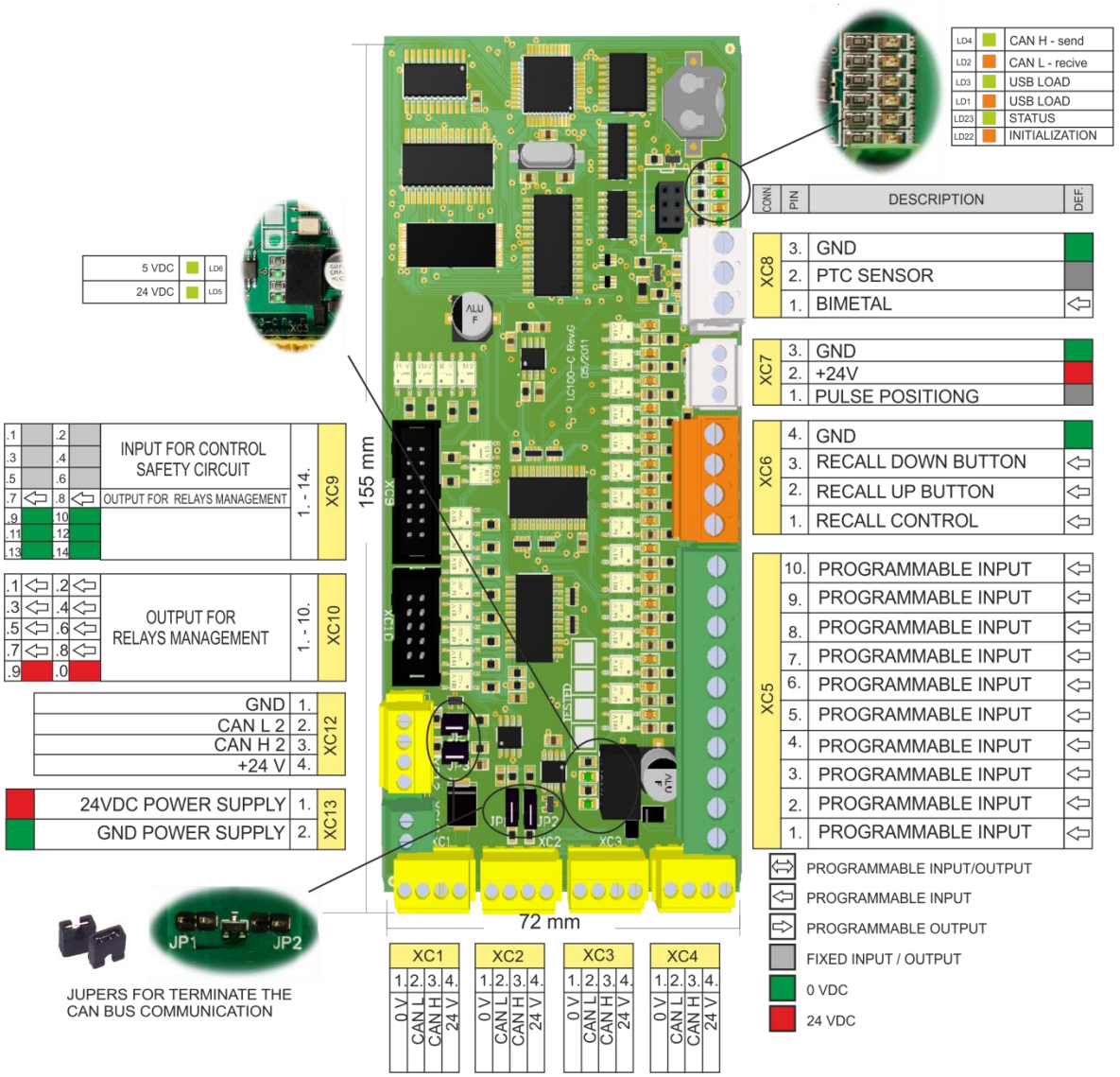
The board is equipped with a CR1220-C1 3V battery used to power the integrated circuits used for the storage of parameters and statistics.

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



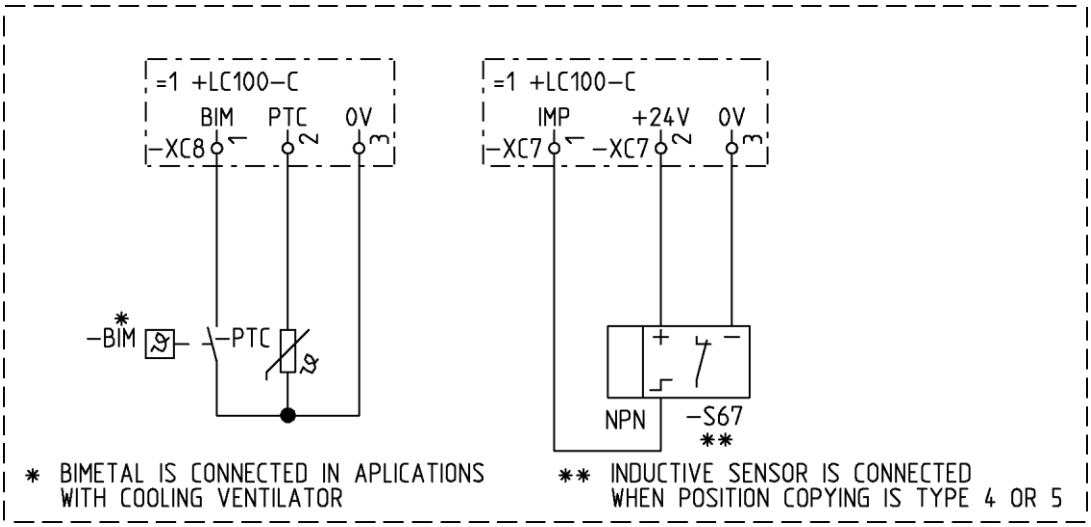
Picture 1 - Example of connecting the inputs.

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

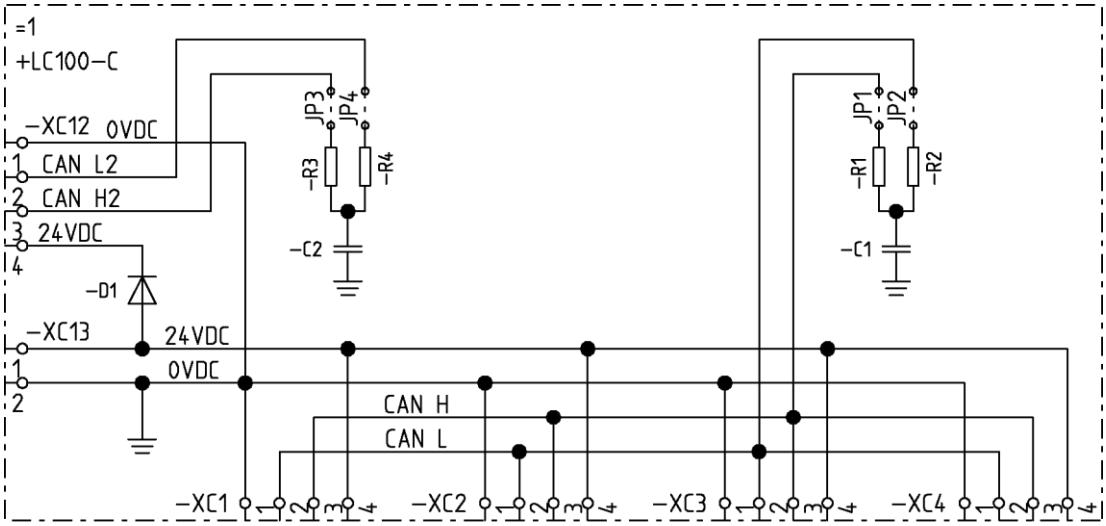


Picture 2 - LC100-C board

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



Power supply diagram for LC100-C board:



JP1, JP2 JUMPERS FOR CAN1 BUS LINE TERMINATION
JP3, JP4 JUMPERS FOR CAN2 BUS LINE TERMINATION

2.2 LC100-C2 main control unit

LC100-C is the central control system board of the LC100 system. In addition to processing input and output information, management and storage of system parameters, the board also has the function of communicating between peripheral I / O boards. Communication between different parts of the system is achieved via CAN communication. The system has two independent CAN channels. One is used for CAN communication with the boards on a simplex mode level, and the other for connection of the landing call boards for multiplex modes 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 5V. Input voltage (24 VDC) is transmitted directly from connectors XC1 trough to XC4, and across a diode to the XC12 connector for connecting the landing call boards in multiplex mode. All connectors are different colors and pitches.

Main functions:

- 2 independent CAN bus channels.
- 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 option for the connection of an inductive sensor (NPN) that is used in certain types of elevator positioning.
- Analog input for PTC probe, resistance measurement with parametric adjustable tripping resistances.
- Real-time clock with battery supply.
- Measurement of ambient temperatures with adjustable operating ranges.
- Dot matrix display with status information
- Buttons “Mode”, “Up”, “Down” for walk through menu’s and status list.
- USB type A connector for transfer of recorded states and statistics.

.

Pin XC8:2 on the input connector XC8 is used for the connection of a PTC sensor and has the ability to customize the level of tripping resistance via the parameters I-01 and I-02.

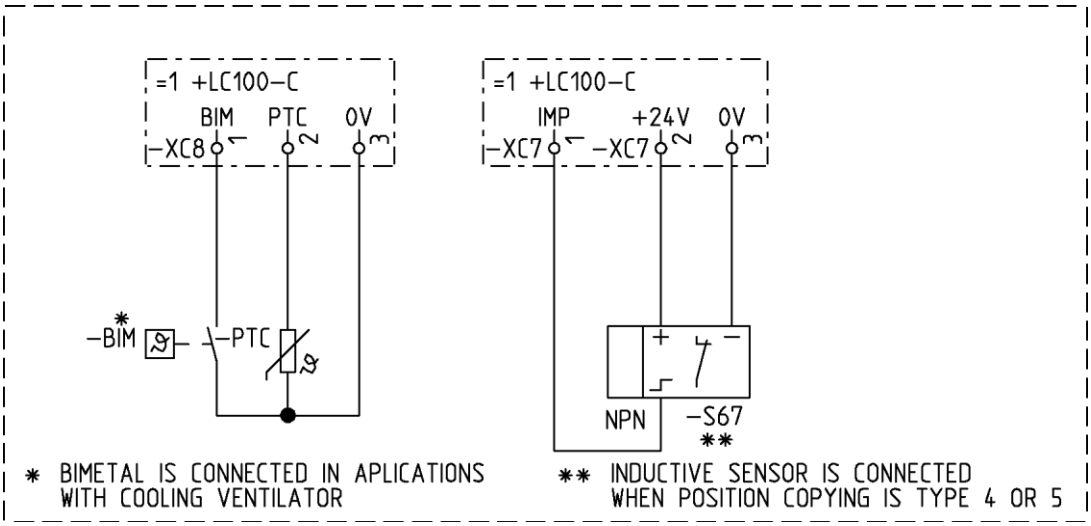
Pin XC7: 1 on the input connector XC7 is used for the connection of a NPN type inductive sensor used for elevator positioning.

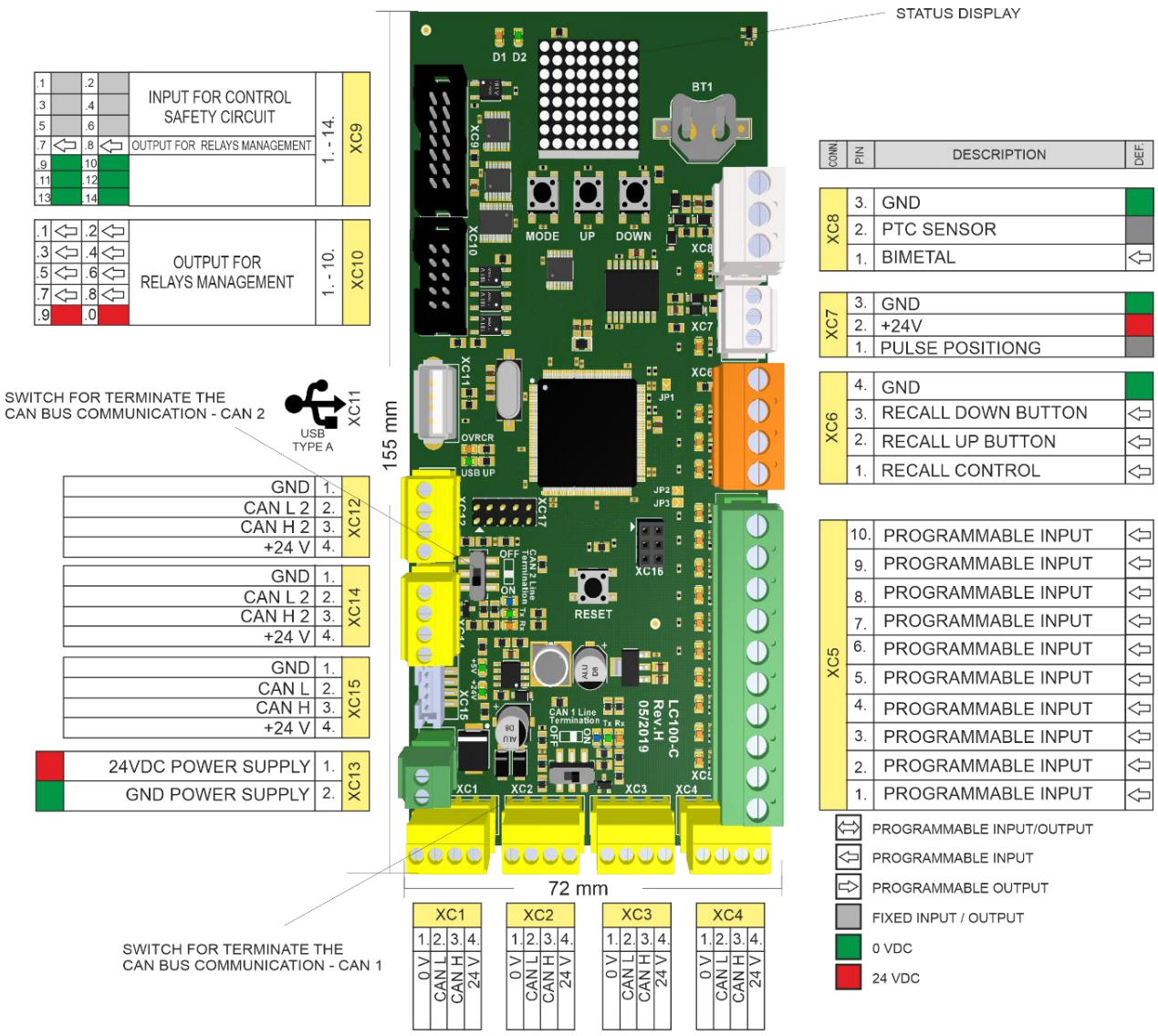
All digital inputs are optocouplers with a LED status indication.

Board is equipped with CR1220-C1 3V battery for RTC.

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

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



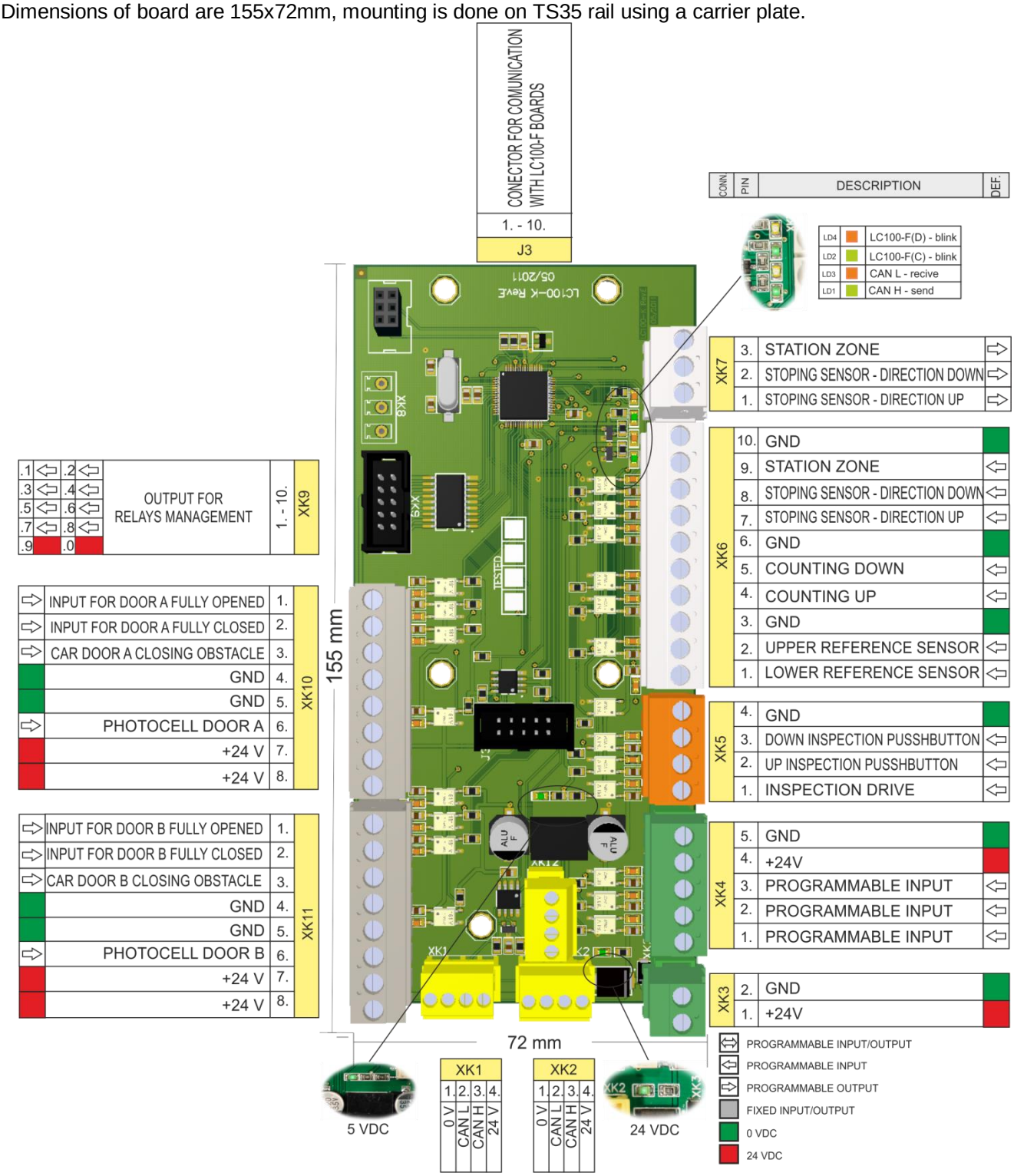


Picture 33 - LC100-C2 board

2.3 LC100-K cabin I/O board

LC100-K board is used as an input/output unit for the elevator cabin.
Power suply is 24VDC and is supplied via CAN connectors XK1 and XK2.
All inputs and outputs on the LC100-K board are programmable, with the possibility to change the polarity of the inputs (NO or NC) and output (NOR or INV).
All digital inputs are optocouplers with a LED status indication.

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

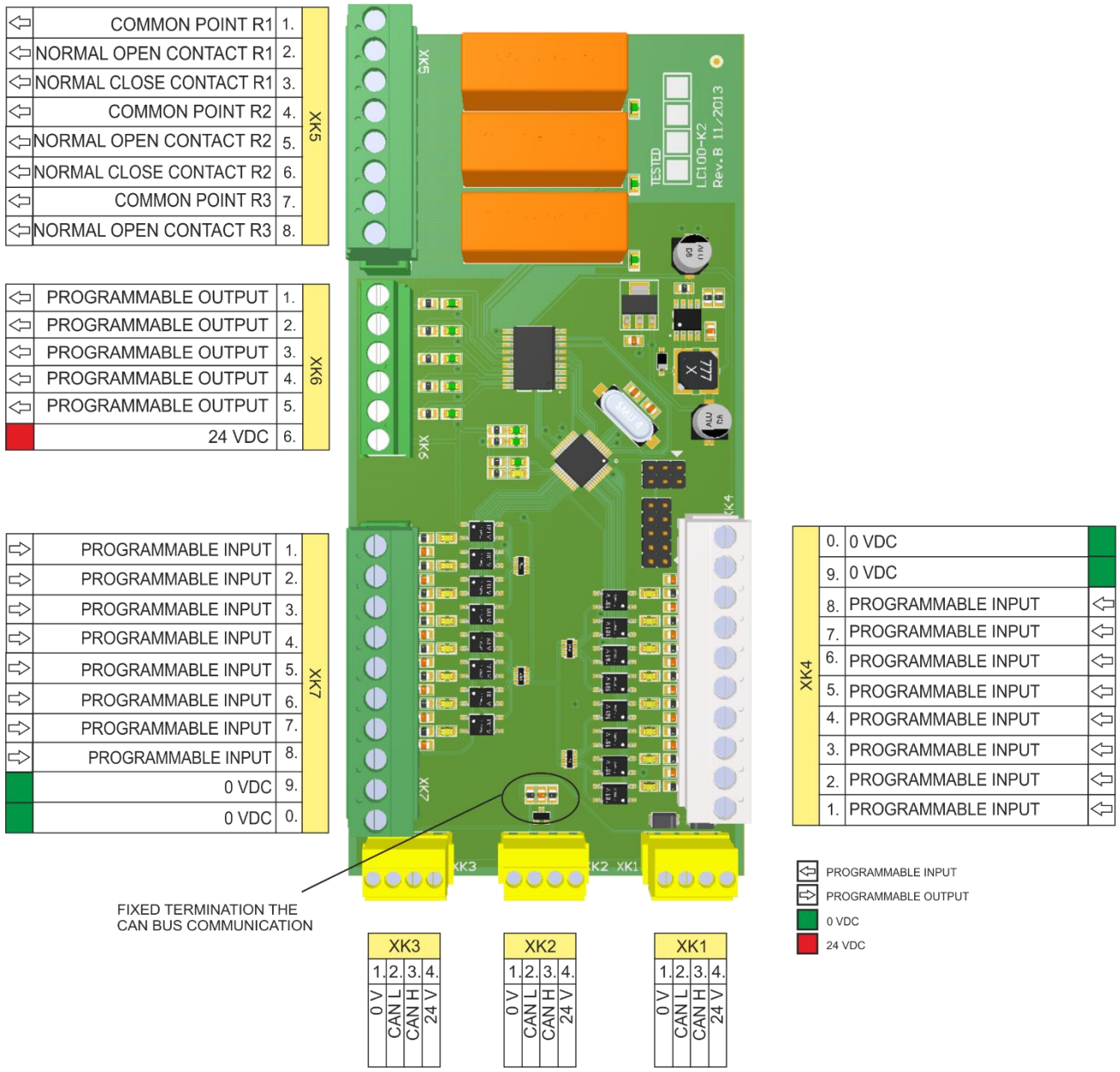


Picture 4 - LC100-K board

2.4 LC100-K2 cabin I/O board

LC100-K2 board is used as an input/output unit for the elevator cabin.
Power suply is 24VDC and is supplied via CAN connectors XK1 and XK2.
All inputs and outputs on the LC100-K board are programmable, with the possibility to change the polarity of the inputs (NO or NC) and output (NOR or INV).
All digital inputs are optocouplers with a LED status indication.

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

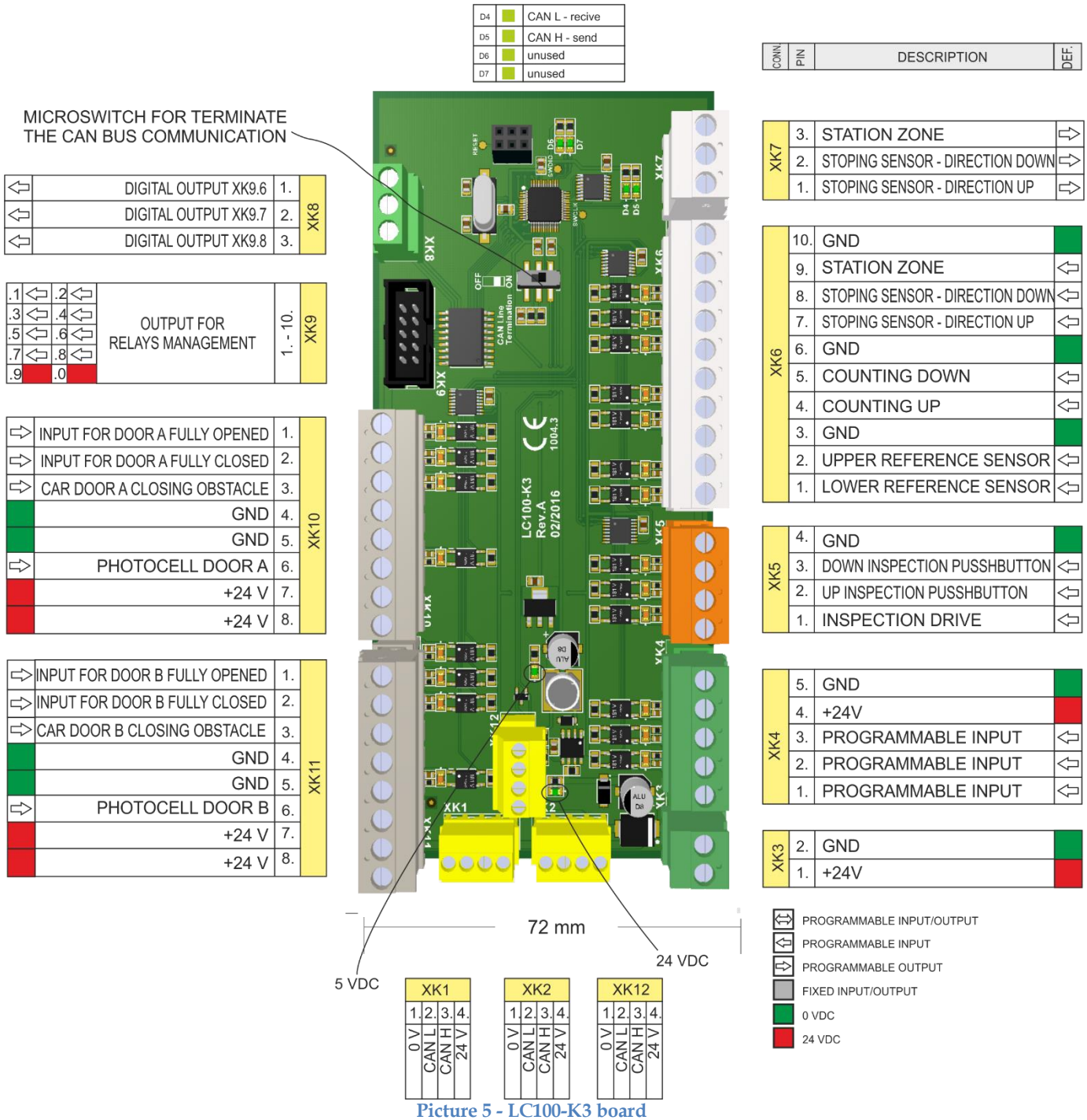


Picture 4 - LC100-K2 board

2.5 LC100-K3 cabin I/O board

LC100-K3 board is used as an input/output unit for the elevator cabin.
Power suply is 24VDC and is supplied via CAN connectors XK1 and XK2.
All inputs and outputs on the LC100-K board are programmable, with the possibility to change the polarity of the inputs (NO or NC) and output (NOR or INV).
All digital inputs are optocouplers with a LED status indication.

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



Picture 5 - LC100-K3 board

2.6 LC100-S safety circuit board

LC100-S board is used to connect multiple elements of the safety circuit. Information about the safety circuits activity status and points of interruption are transferred to a lower voltage trough a optocoupler and then via the XS15 flat connector to the LC100-C main board.

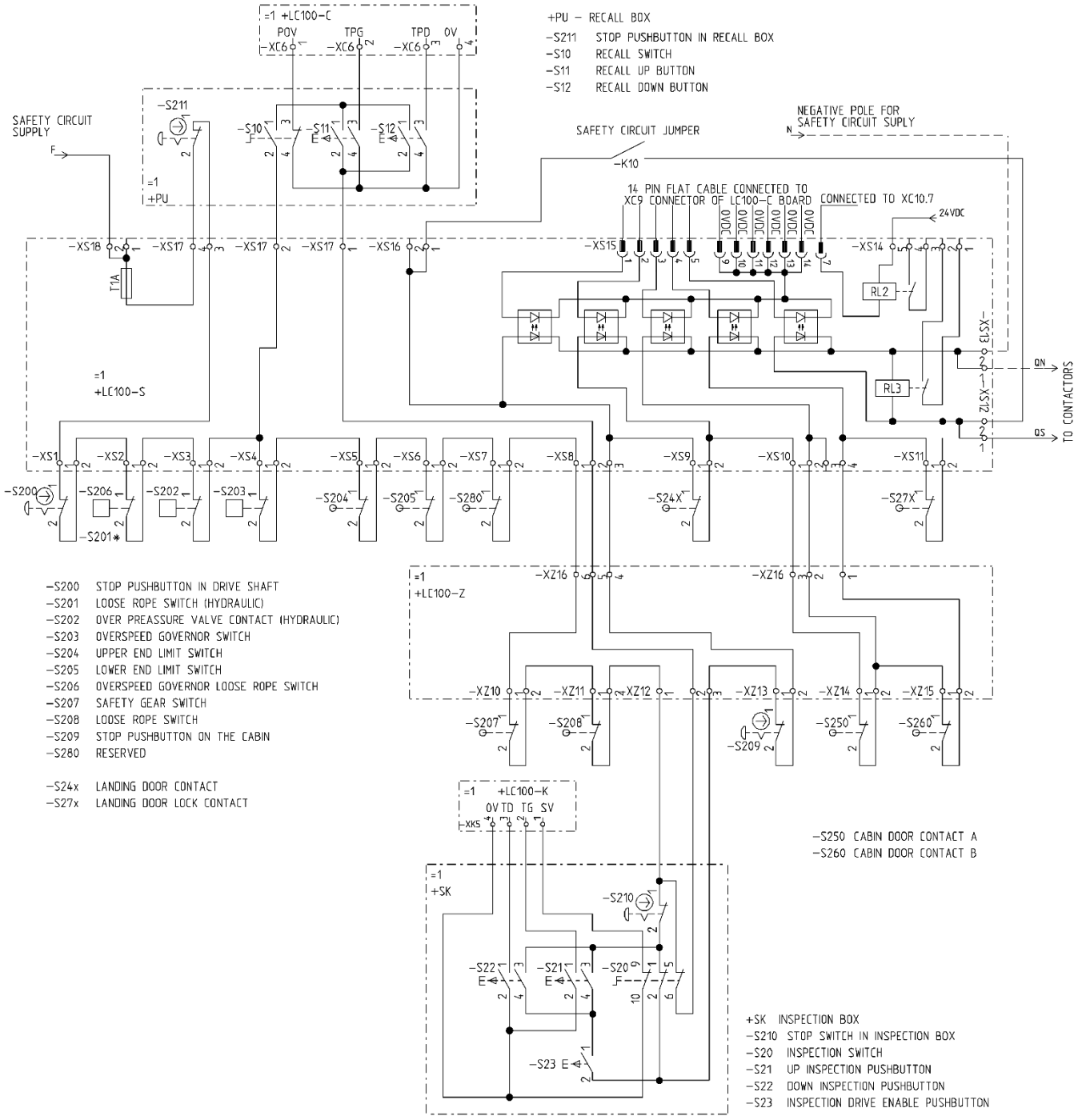
Elements of the safety circuit are connected to the connectors XS1 trough to XS16 which are red colored.

The board comes equipped with a 1A safety fuse and status LED's for a easy chek of the safety circuit status.

There are two versions of the LC100-S board acording to the safety circuit voltage:

1. 220VAC and 48VAC (with capacitors).
2. 48VDC (with jumpers, short circued capacitors).

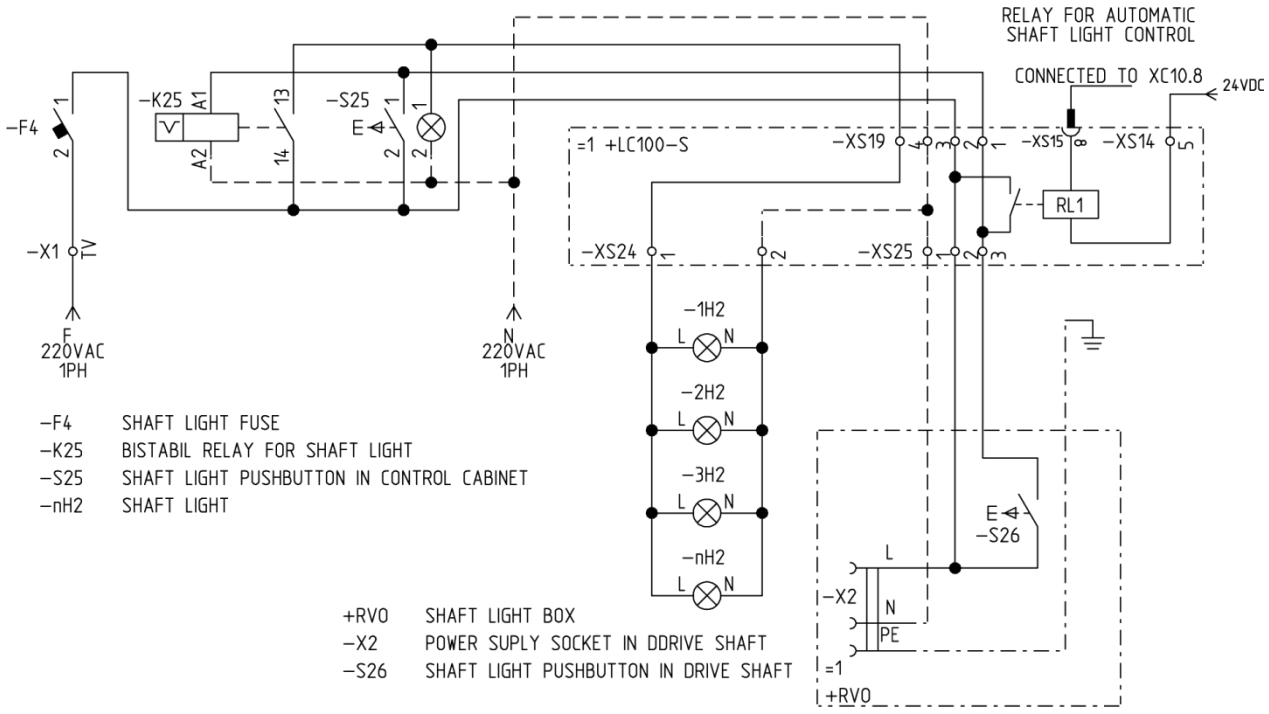
Connection diagram for safety circuit:



On the LC100-S board there are also connectors for the drive shaft light with a LED indicator. The board also controls the automatic light function (the shaft light is powered on automaticly when the inspection drive is turned on). Shaft lighting is controled by the RL1 relay with the output parameter XC10.2.

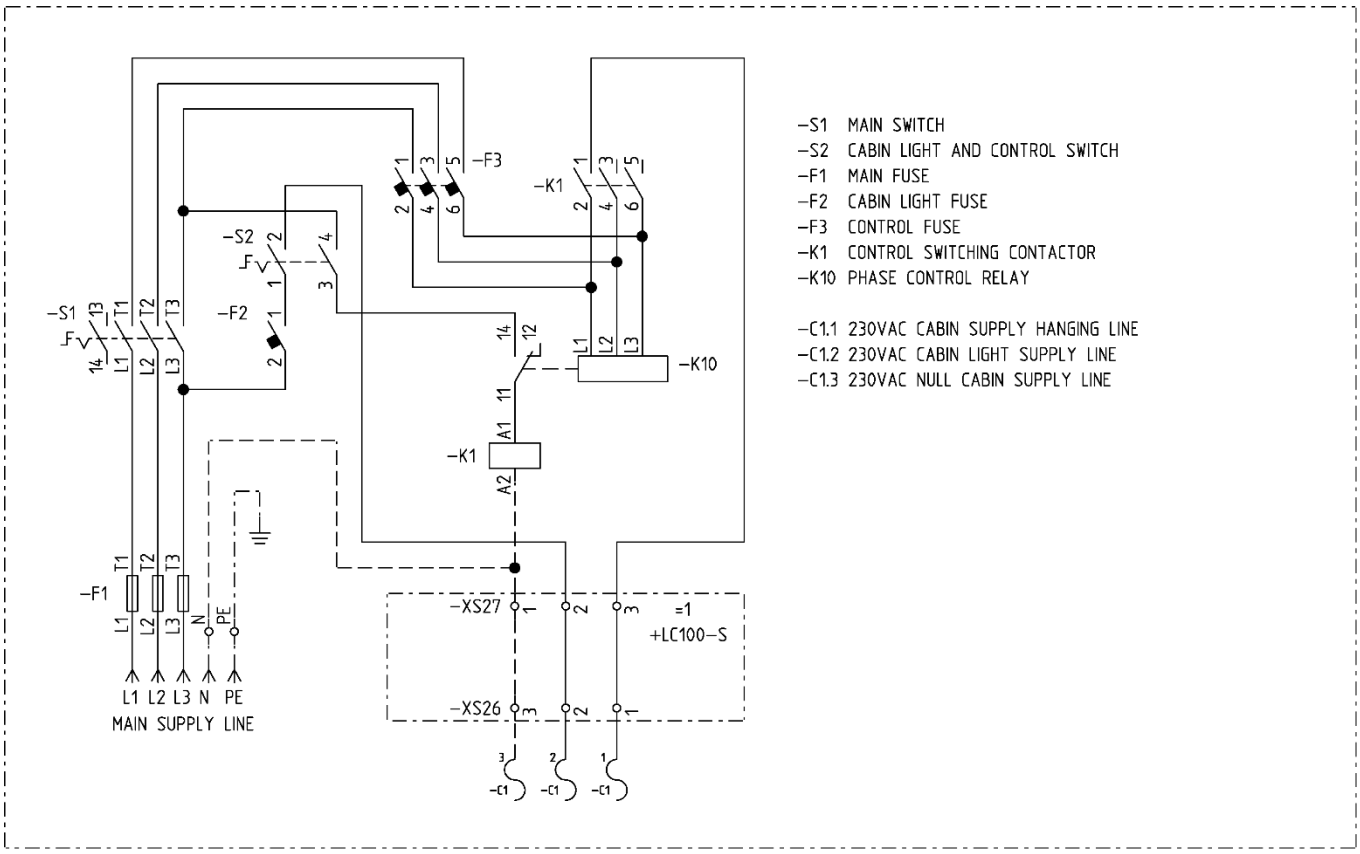
- XS19 – input connector for the shaft light power supply.
- XS25 – connector for the shaft light box in the drive shaft pit.
- XS24 – connector for the shaft lights.

Shaft light connection diagram:



The XS27 input connector is the 230VAC power supply for the cabin,The XS26 output connector is used to supply the cabin with 230VAC via the traveling cable.

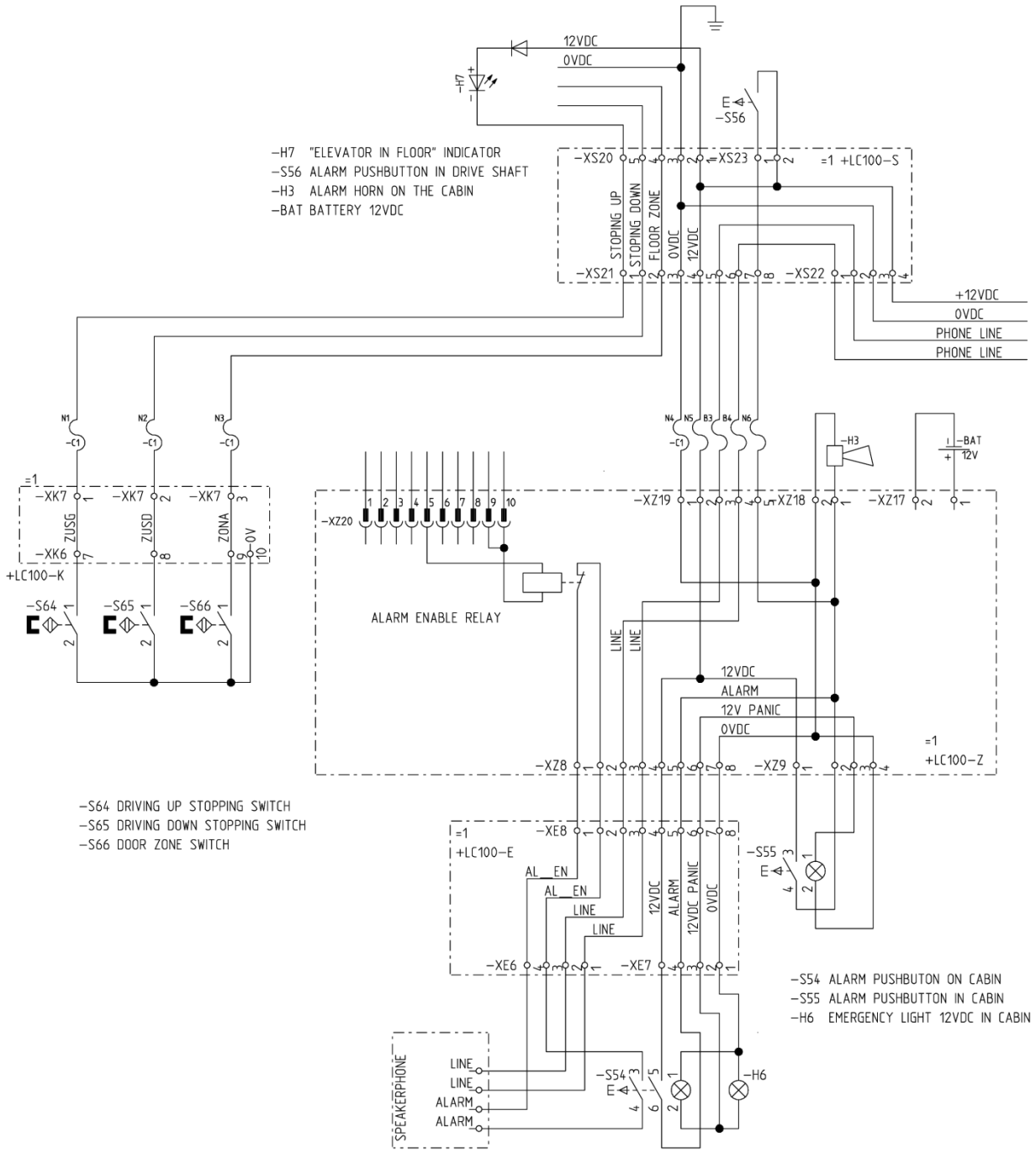
Cabin power supply connection diagram:

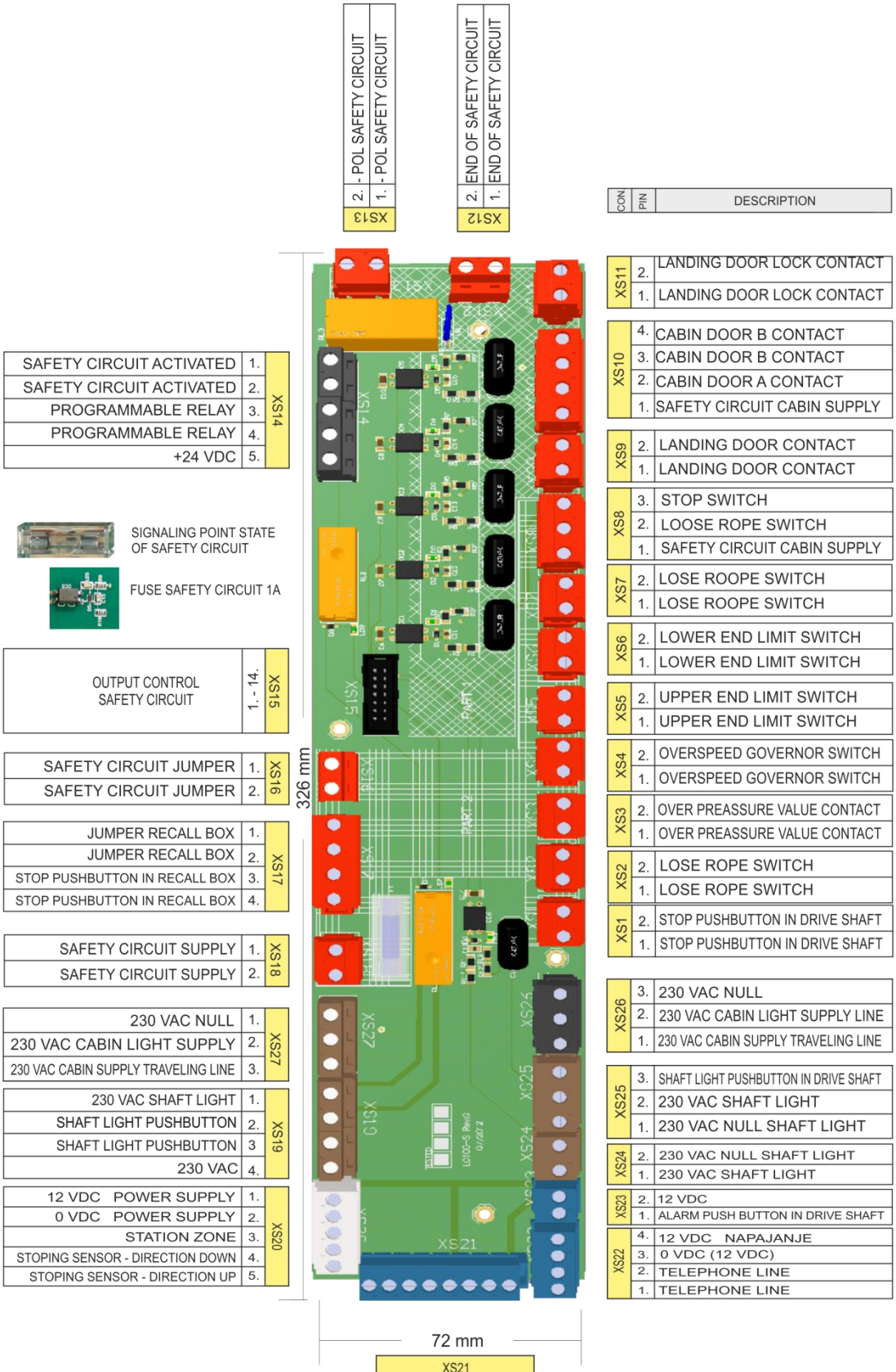


Connectors XS20 to XS23 are used to connect to a voice device in the cabin, emergency power supply, alarm buttons, and the "elevator in station" indicator.

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

Alarm and speaker phone connection diagram:





Picture 5 - LC100-S bord

2.7 LC100-SR safety circuit board

LC100-S board is used to connect multiple elements of the safety circuit. Information about the safety circuits activity status and points of interruption are transferred to a lower voltage trough a optocoupler and then via the XS3 flat connector to the LC100-C main board.

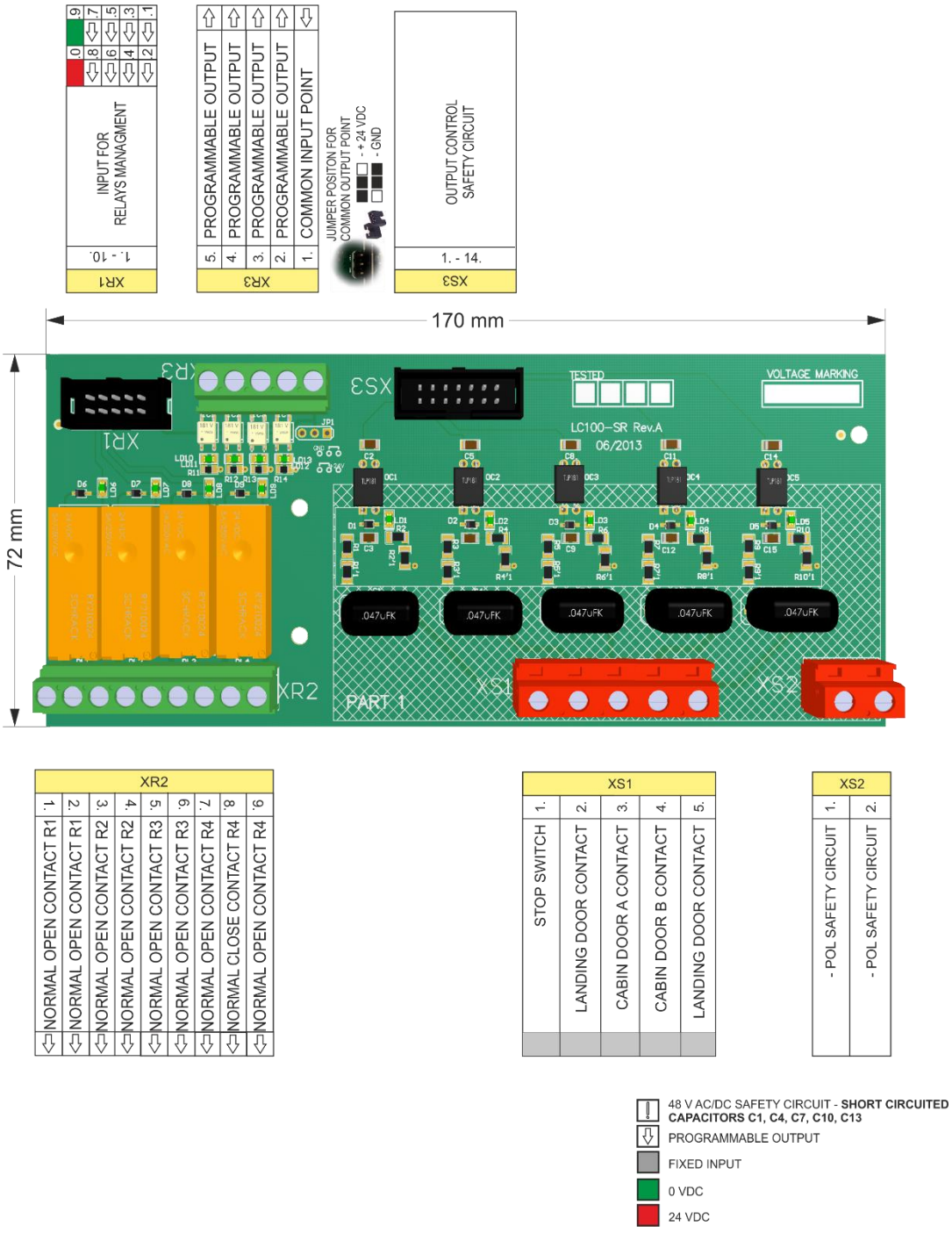
Elements of the safety circuit are connected to connectors XS1 to XS2 which are red colored.

The board comes equipped with a 1A safety fuse and status LED's for a easy chek of the safety circuit status.

There are two versions of the LC100-SR board acording to the safety circuit voltage:

1. 220VAC and 48VAC (with capacitors)
2. 48VDC (with jumpers, short circued capacitors).

Connection diagram for safety circuit:



2.1 LC100-SR2 safety circuit board

LC100-SR2 board is used to connect multiple elements of the safety circuit. Information about the safety circuits activity status and points of interruption are transferred to a lower voltage trough a optocoupler and then via CAN bus communication, X1,X2,X8 connectors to the LC100-C main board.

Elements of the safety circuit are connected to connectors X2 to X3 which are red colored.

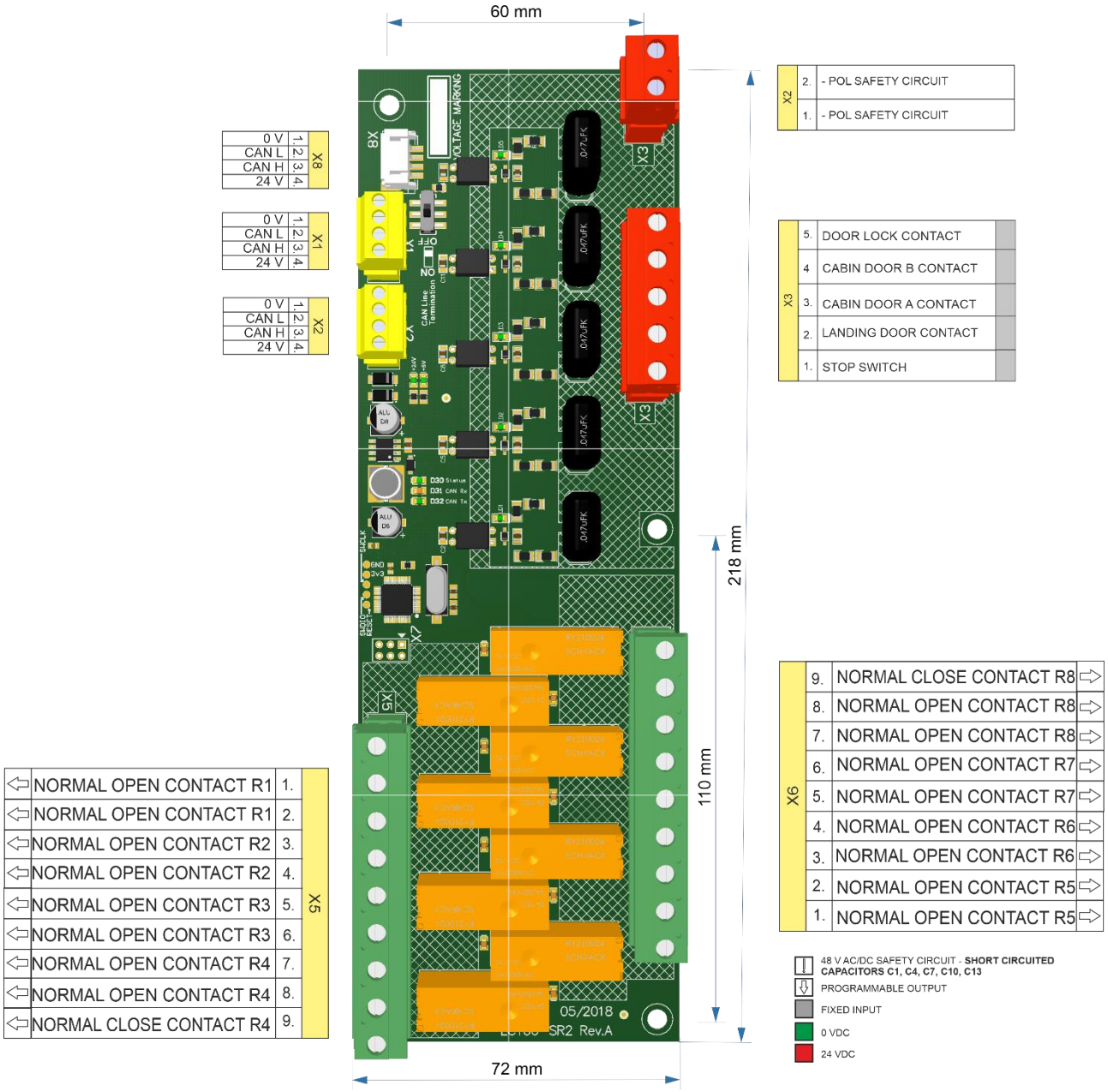
The board comes equipped with a 1A safety fuse and status LED's for a easy chek of the safety circuit status.

There are 8 relays for output connections on connectors X5 and X6.

There are two versions of the LC100-SR2 board acording to the safety circuit voltage:

1. 220VAC and 48VAC (with capacitors)
2. 48VDC (with jumpers, short circued capacitors).

Connection diagram for safety circuit:



2.2 LC100-E input-output unit for cabin calls

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

The system can have two LC100-E boards addressed as "0" and "1 ".

Addressing the LC100-E board is performed by inserting a jumper, marked as JP3.

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

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

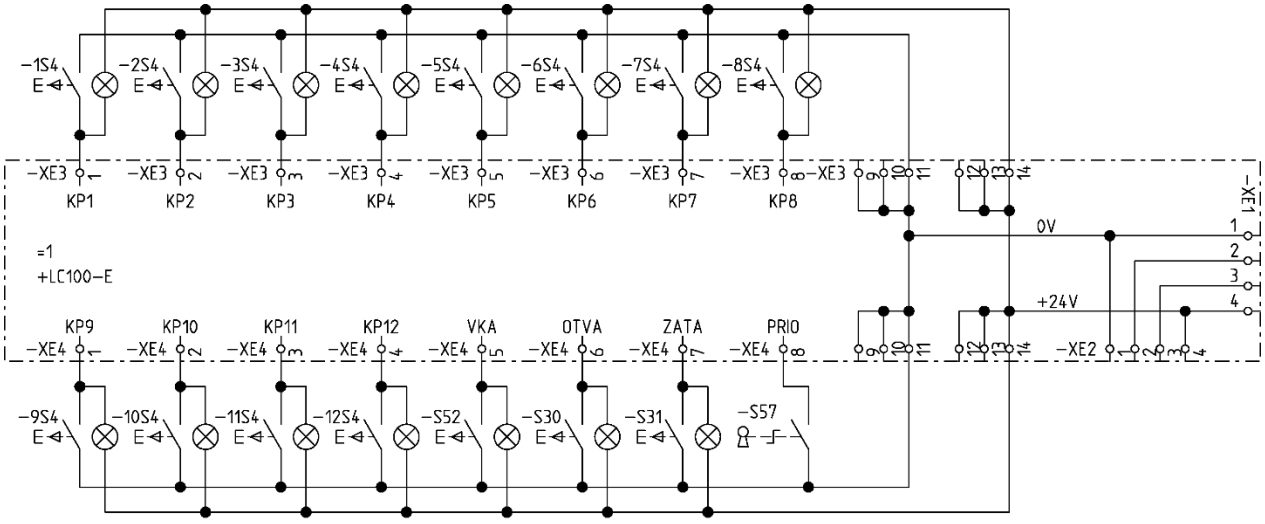
XE4.7 and XE4.8 pins and are used for managing the dot matrix indicators, if the pins do not have a assigned function.

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

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

The Dimensions of the board are 42x200mm and installation is done by using spacers.

Cabin comands wireing diagram:

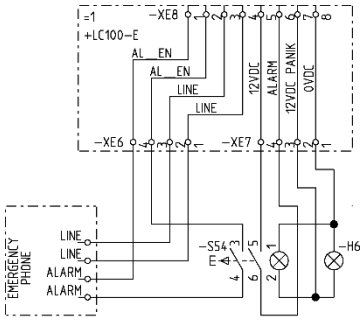


-xS4 CABIN CALLS A SIDE TO x FLOOR
-S52 CAR FAN PUSHBUTTON
-S30 OPEN DOOR A PUSHBUTTON
-S31 CLOSE DOOR PUSHBUTTON
-S57 PRIORITY DRIVE KEY SWITCH

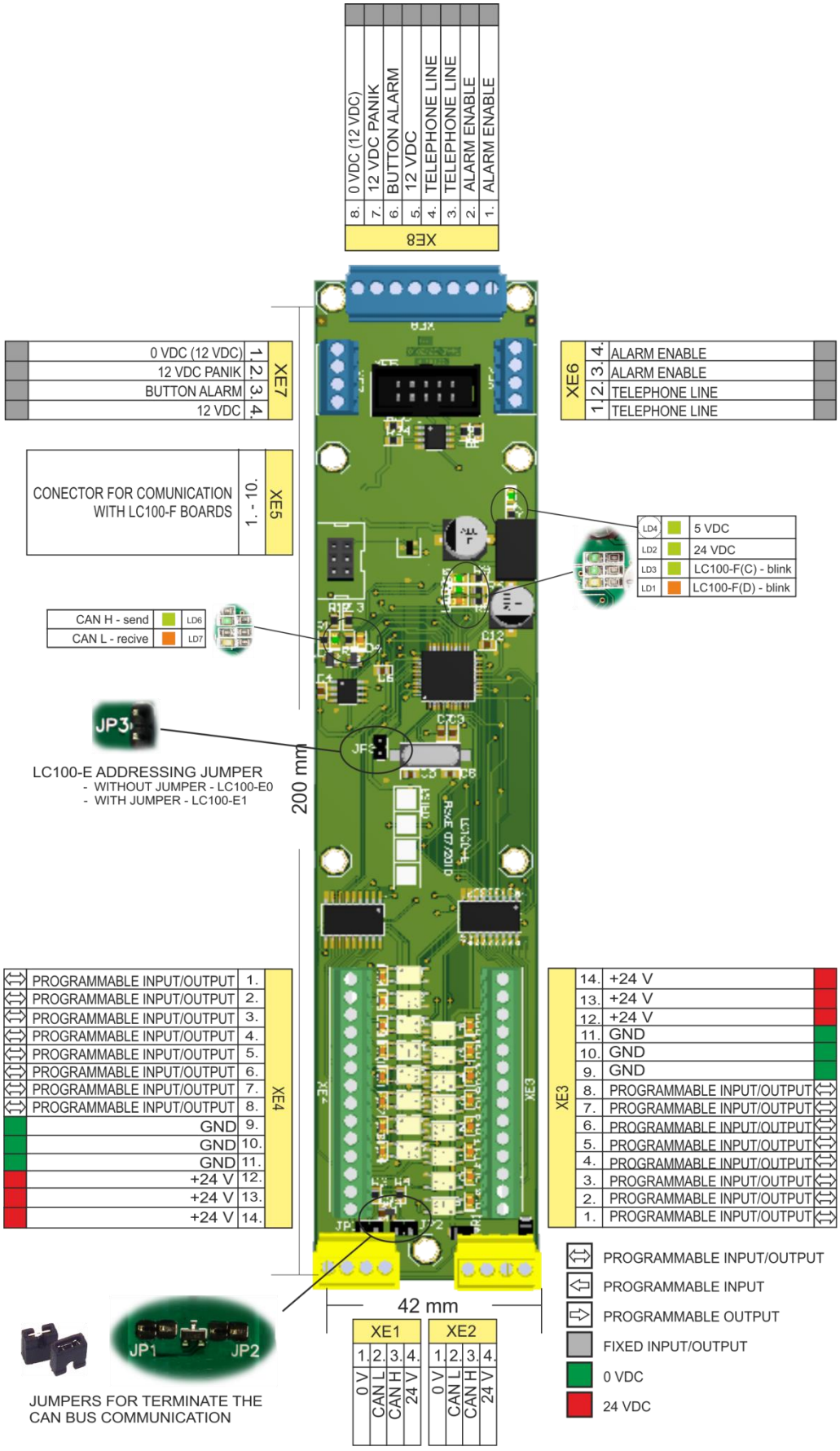
LC100-E board also contains connectors for connecting the alarm push button, emergency phone and emergency power supply in the cabin.

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

Connection diagram for alarm pushbutton



-S54 ALARM PUSHBUTTON
-H6 EMERGENCY LIGHT 12VDC



Picture 5 - LC100-E board

2.3 LC100-E2 in/out board

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

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

Addressing the LC100-E2 board is performed by the software using the addressing menu.

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

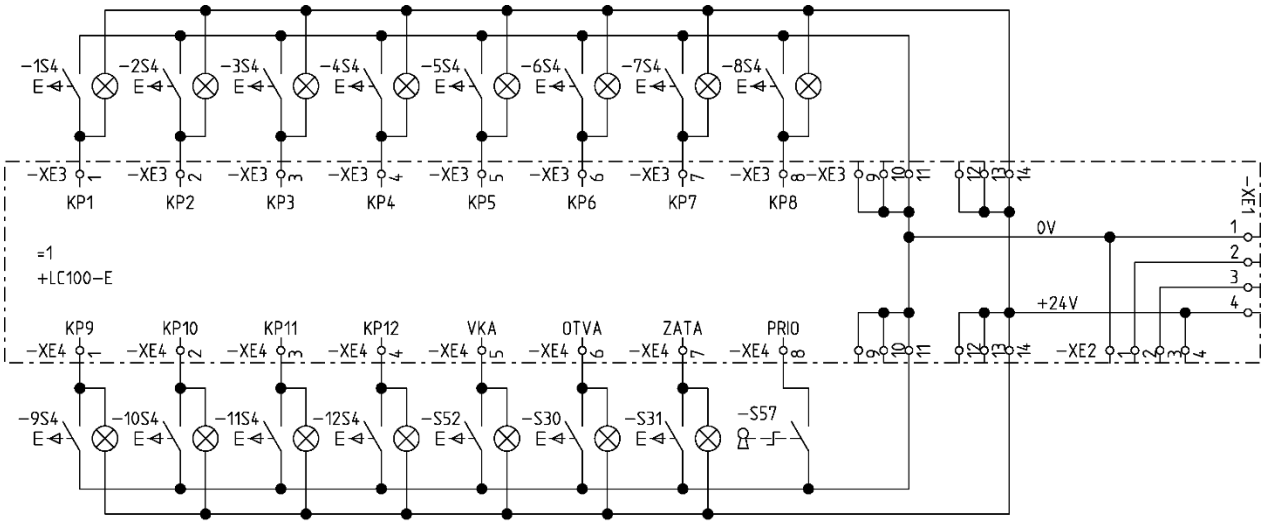
XE4.7 and XE4.8 pins and are used for managing the dot matrix indicators, if the pins do not have a assigned function.

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

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

The Dimensions of the board are 172x42mm and installation is done by using spacers.

Cabin comands wireing diagram:

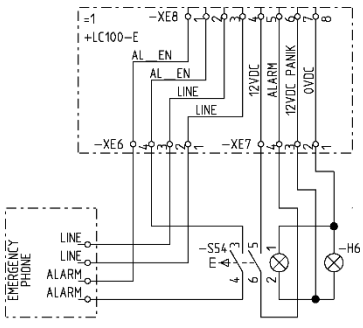


-xS4 CABIN CALLS A SIDE TO x FLOOR
-S52 CAR FAN PUSHBUTTON
-S30 OPEN DOOR A PUSHBUTTON
-S31 CLOSE DOOR PUSHBUTTON
-S57 PRIORITY DRIVE KEY SWITCH

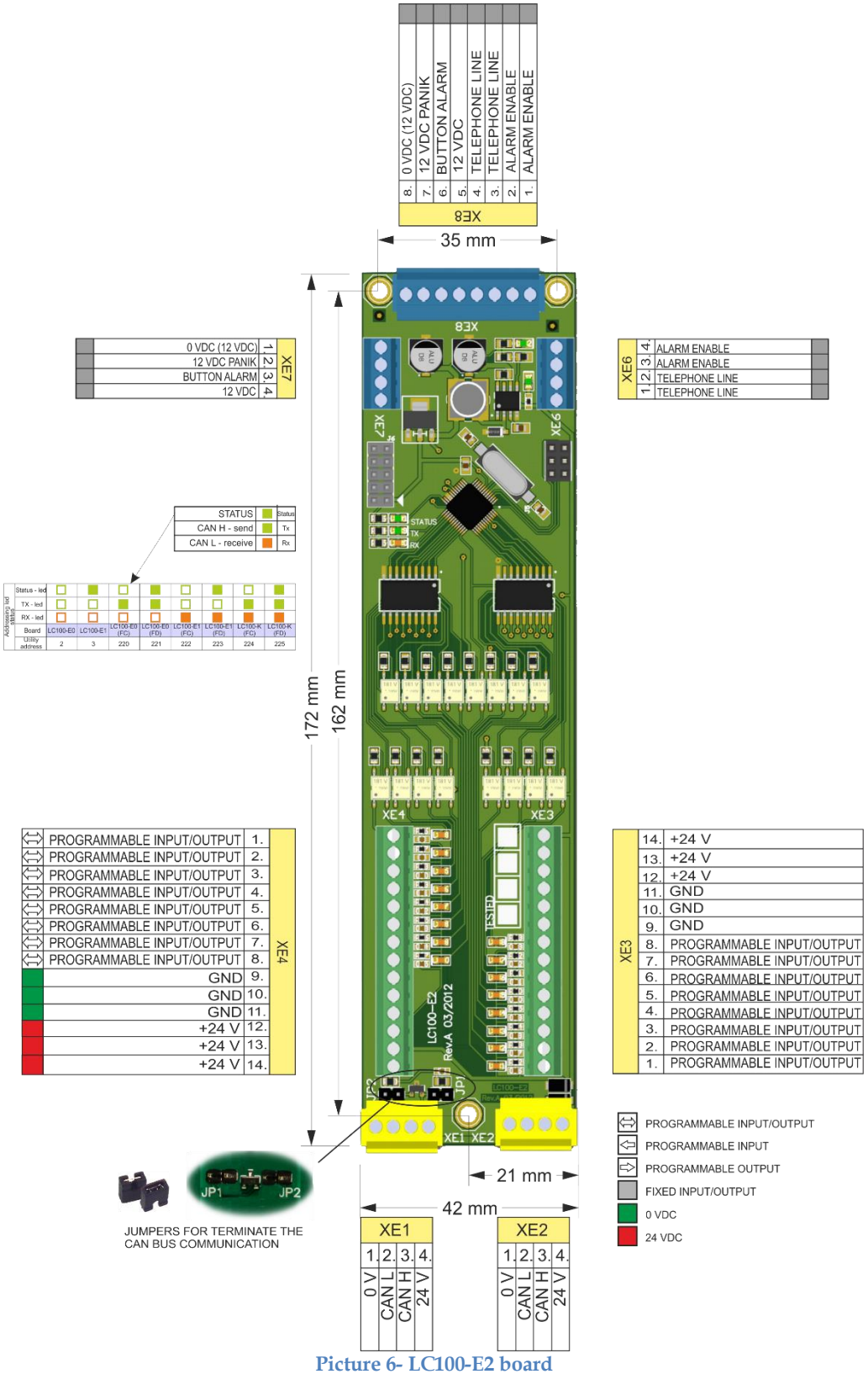
LC100-E2 board also contains connectors for connecting the alarm push button, emergency phone and emergency power supply in the cabin.

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

Connection diagram for alarm pushbutton



-S54 ALARM PUSHBUTTON
-H6 EMERGENCY LIGHT 12VDC



Picture 6- LC100-E2 board

2.4 LC100-E3 cabin I/O board

The LC100-E3 system board is used as input/output unit. The main purpose of the board is processing cabin calls. It consists of CAN communication connectors XE1 and XE2,and connectors with I/O pins XE3 and XE4.

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

Addressing the LC100-E3 board is performed by the software using the addressing menu.

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

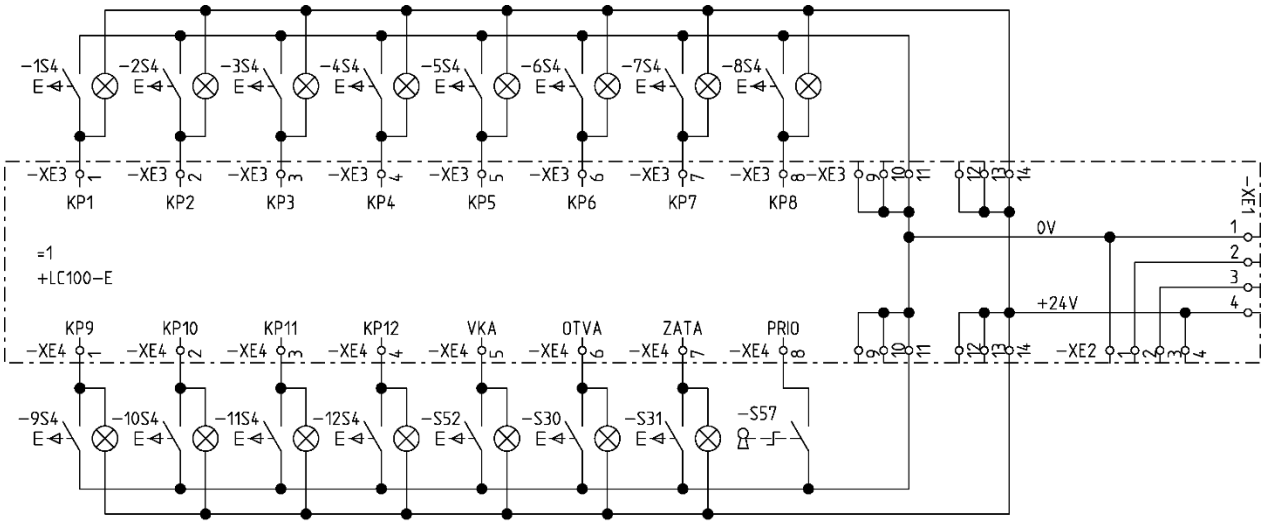
XE4.7 and XE4.8 pins and are used for managing the dot matrix indicators, if the pins do not have a assigned function.

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

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

The Dimensions of the board are 172x42mm and installation is done by using spacers.

Cabin comands wireing diagram:

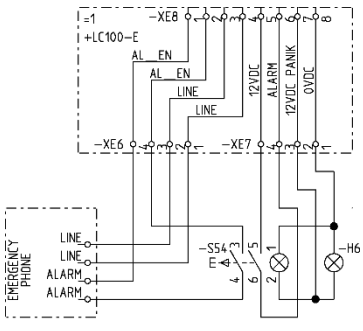


-xS4 CABIN CALLS A SIDE TO x FLOOR
-S52 CAR FAN PUSHBUTTON
-S30 OPEN DOOR A PUSHBUTTON
-S31 CLOSE DOOR PUSHBUTTON
-S57 PRIORITY DRIVE KEY SWITCH

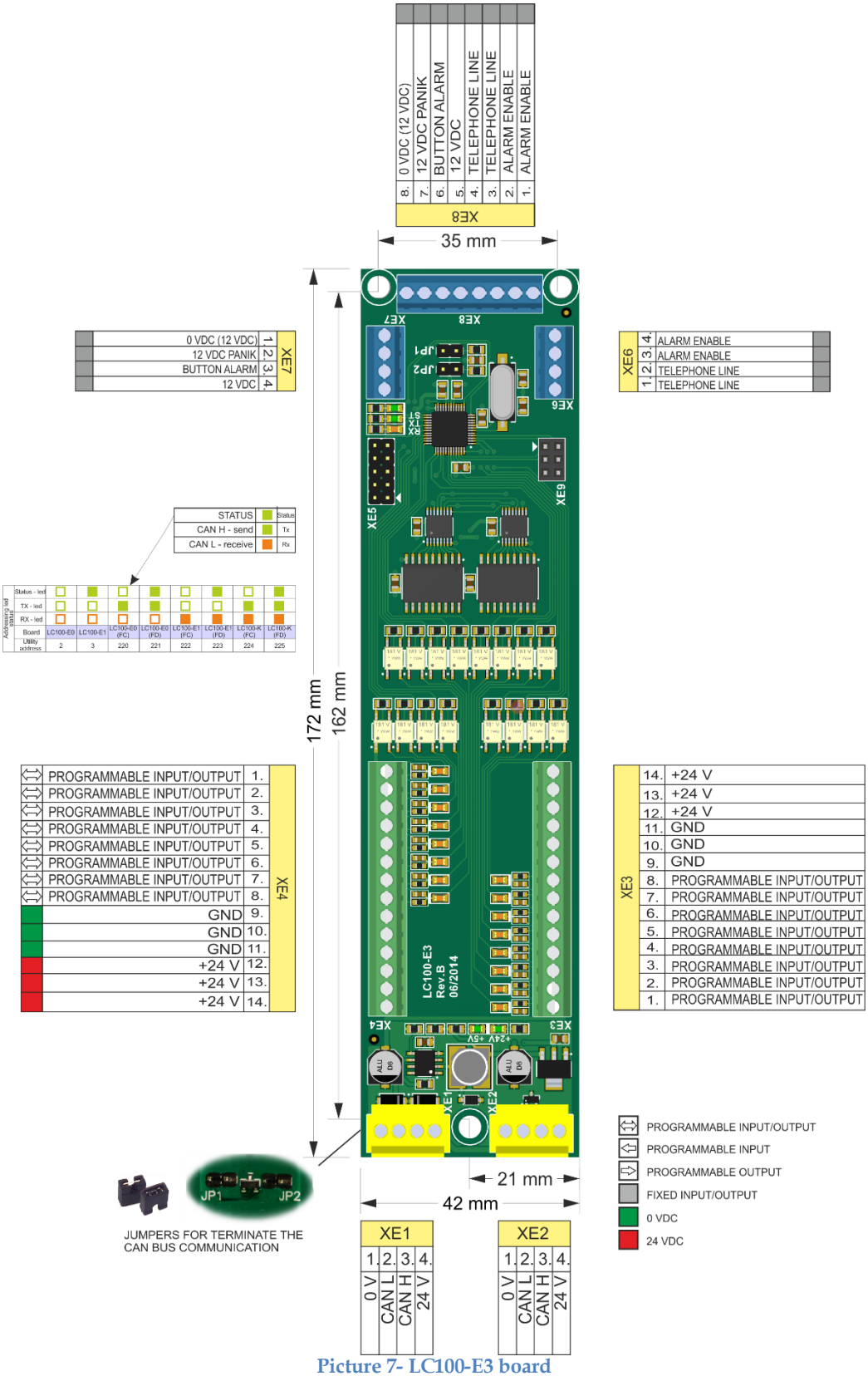
LC100-E3 board also contains connectors for connecting the alarm push button, emergency phone and emergency power supply in the cabin.

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

Connection diagram for alarm pushbutton



-S54 ALARM PUSHBUTTON
-H6 EMERGENCY LIGHT 12VDC



Picture 7- LC100-E3 board

2.5 LC100-E3.1 cabin I/O board

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

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

Addressing the LC100-E3.1 board is performed by the software using the addressing menu.

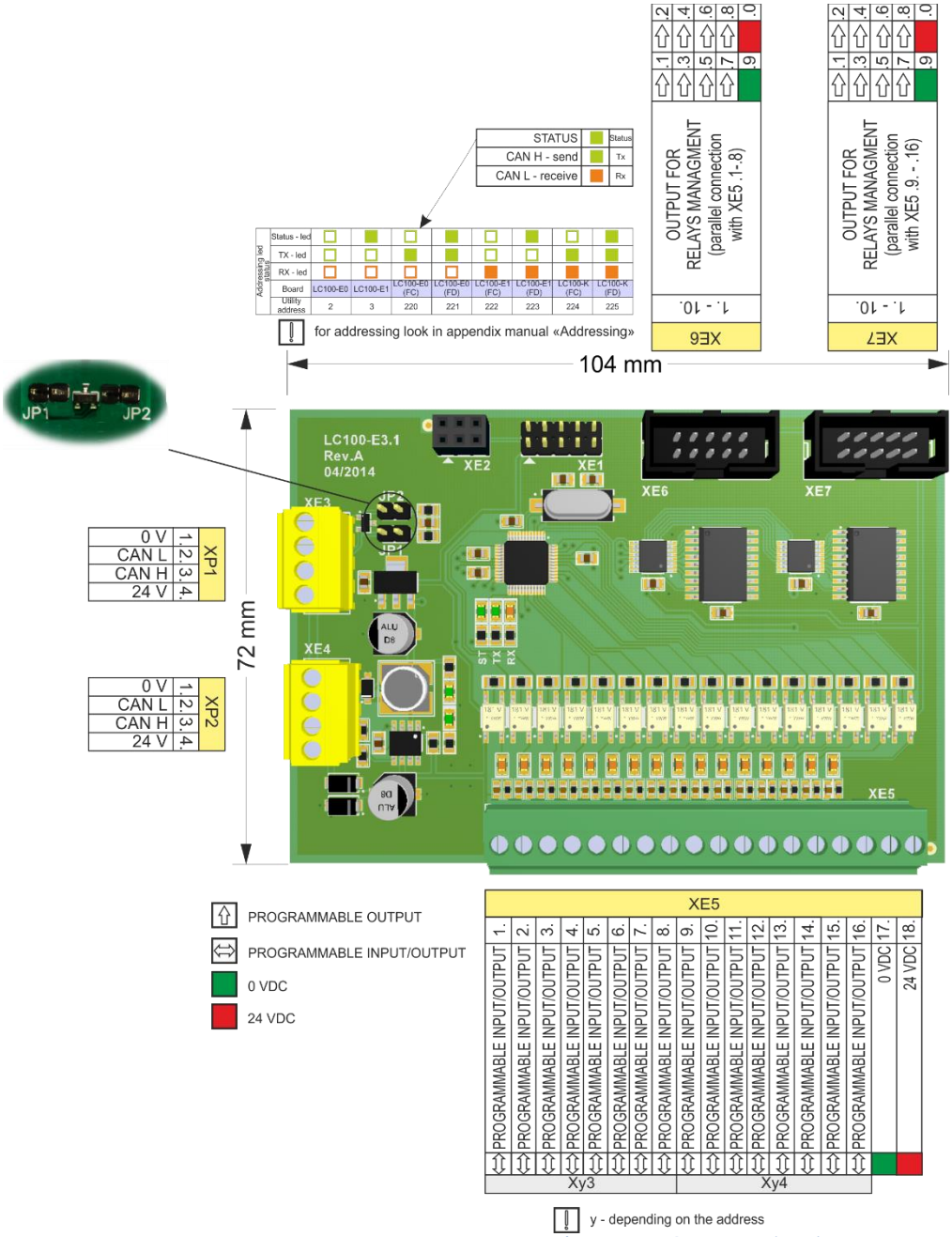
All I/O pins are programmable and are equipped with LED indicators to monitor the status of inputs/outputs.

XE4.7 and XE4.8 pins and are used for managing the dot matrix indicators, if the pins do not have a assigned 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 conector.

The dimensions of the board are 104x72mm, mounting is done on a TS35 rail using a carrier plate.



Picture 8- LC100-E3.1 bord

2.6 LC100-E4 cabin I/O board

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

The system can have 4 LC100-E4 boards, addressed as; LC100-E0, E1, E2, E3 (must be enabled with the A-10 parameter)

Addressing the LC100-E4 board is performed by the S2 dip switch (direct addressing).

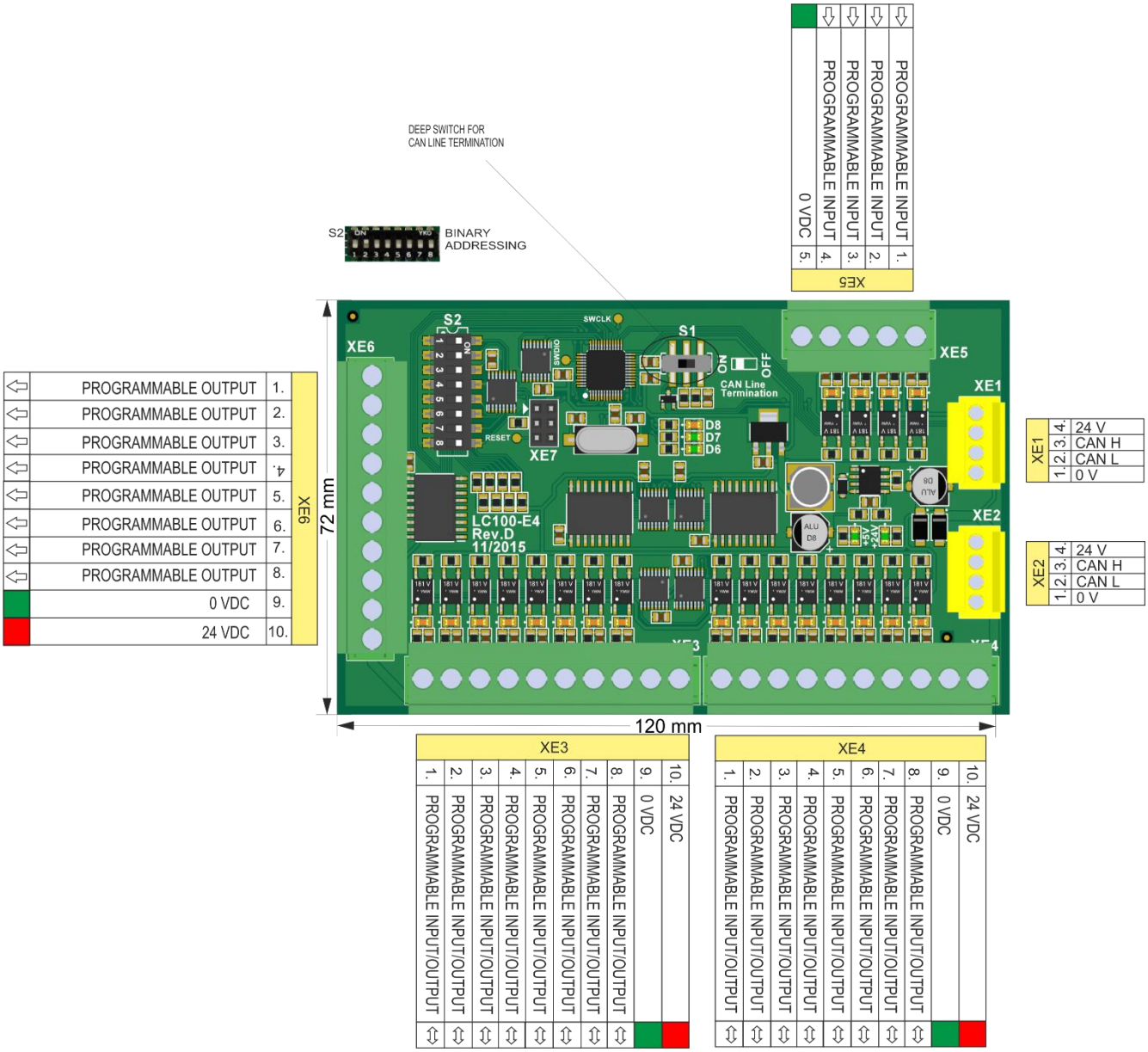
All I/O pins are programmable and are equipped with LED indicators to monitor the status of inputs/outputs.

XE4.7 and XE4.8 pins and are used for managing the dot matrix indicators, if the pins do not have a assigned 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 conector.

The dimensions of the board are 120x72mm, mounting is done on a TS35 rail using a carrier plate.



Picture 9- LC100-E4 bord

2.7 LC100-E5 cabin I/O board

The LC100-E5 system board is used as input/output unit. The main purpose of the board is processing cabin calls. It consists of CAN communication connectors XE1 and XE2,and connectors with I/O pins XE3 and XE4.

The system can have 8 LC100-E5 boards, addressed as; LC100-E0, E1, E0(FC), E0(FD), E1(FC), E1(FD), LC100-K(FC),K(FD)..

Addressing the LC100-E5 board is performed by dip switches binary addressing.

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

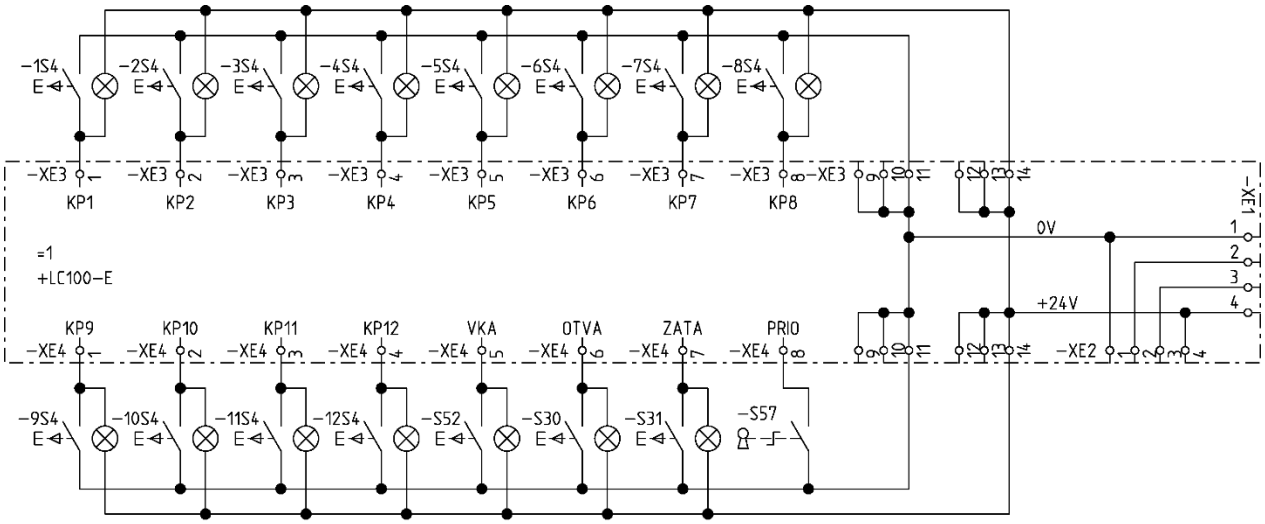
XE4.7 and XE4.8 pins and are used for managing the dot matrix indicators, if the pins do not have a assigned function.

The S1 switch is used to terminate the CAN bus communication.

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

The dimensions of the board are 171,5x42mm, installation is done by using spacers.

Cabin comands wireing diagram:

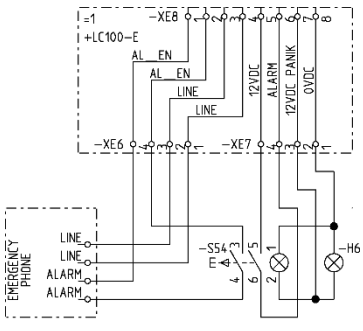


-xS4 CABIN CALLS A SIDE TO x FLOOR
-S52 CAR FAN PUSHBUTTON
-S30 OPEN DOOR A PUSHBUTTON
-S31 CLOSE DOOR PUSHBUTTON
-S57 PRIORITY DRIVE KEY SWITCH

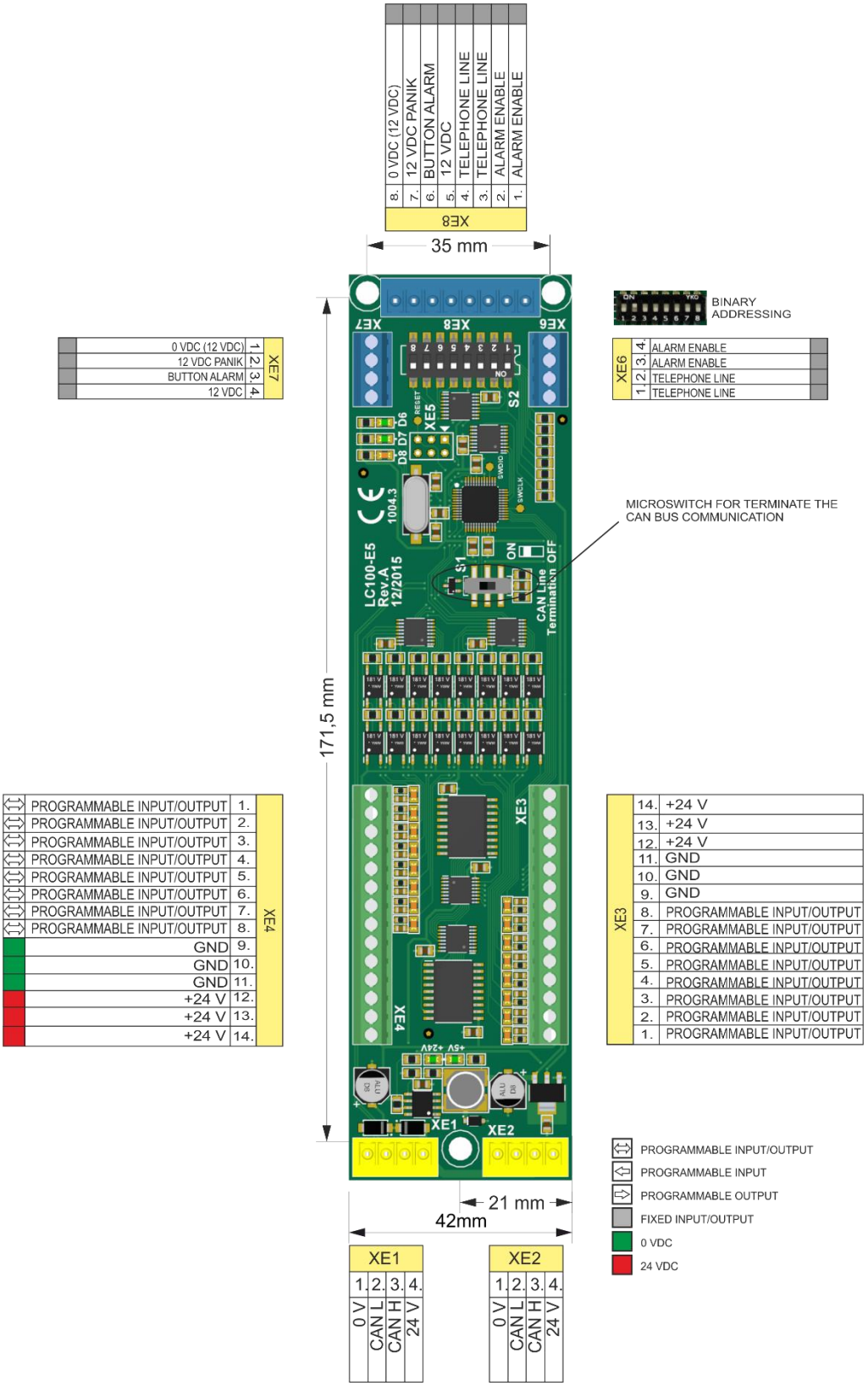
LC100-E5 board also contains connectors for connecting alarm push button, emergency phone and emergency power supply in the cabin.

- XE6 connector for connecting a voice device
- XE7 connector for connecting alarm pushbutton.
- XE8 connector for connecting LC100-E5 with LC100-Z board.

Connection diagram for alarm pushbutton



-S54 ALARM PUSHBUTTON
-H6 EMERGENCY LIGHT 12VDC



Picture 10- LC100-E3 board

2.8 LC100-E6 cabin/landing I/O board

The LC100-E6 system board is used as input/output unit. The main purpose of the board is processing cabin calls and for additional inputs/outputs. It consists of CAN communication connectors X1 and X2, connector X3 I/O pins and X4 output connector through relays.

The system can have 8 LC100-E6 boards addressed as LC100-E0, E1, E2, E3, E4, E5, E6, E7 (must be enabled with the A-7 parameter)

Addressing the LC100-E6 board is performed by dip switches binary addressing.

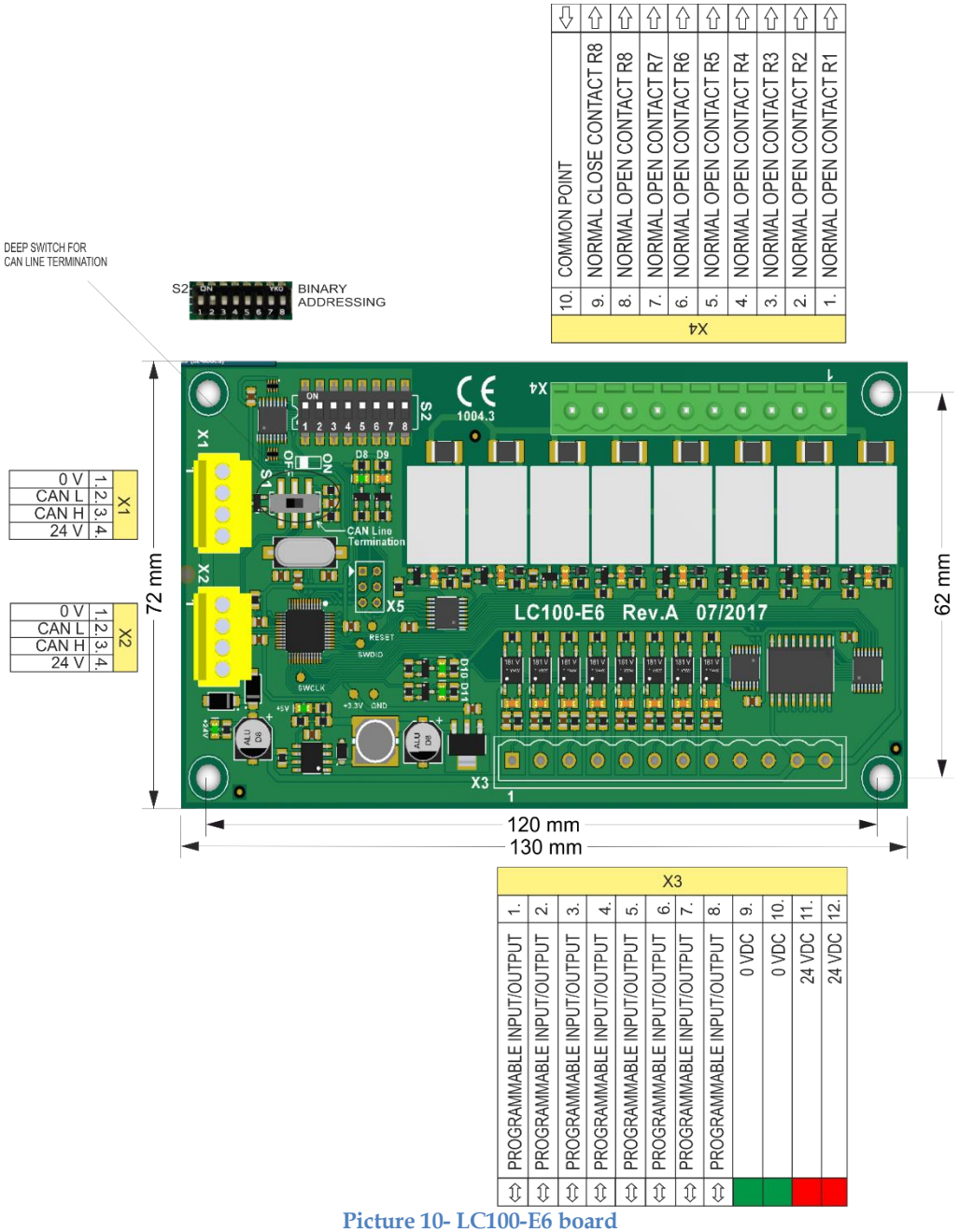
X3 I/O pins are programmable and are equipped with LED indicatiors to monitor the status of inputs/outputs.

X4 pins are programmable outputs and are equipped with LED indicators to monitor the status of outputs.

S1 switch is used to terminate the CAN bus communication.

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

The Dimensions of the board are 171,5x42mm, installation is done using spacers.



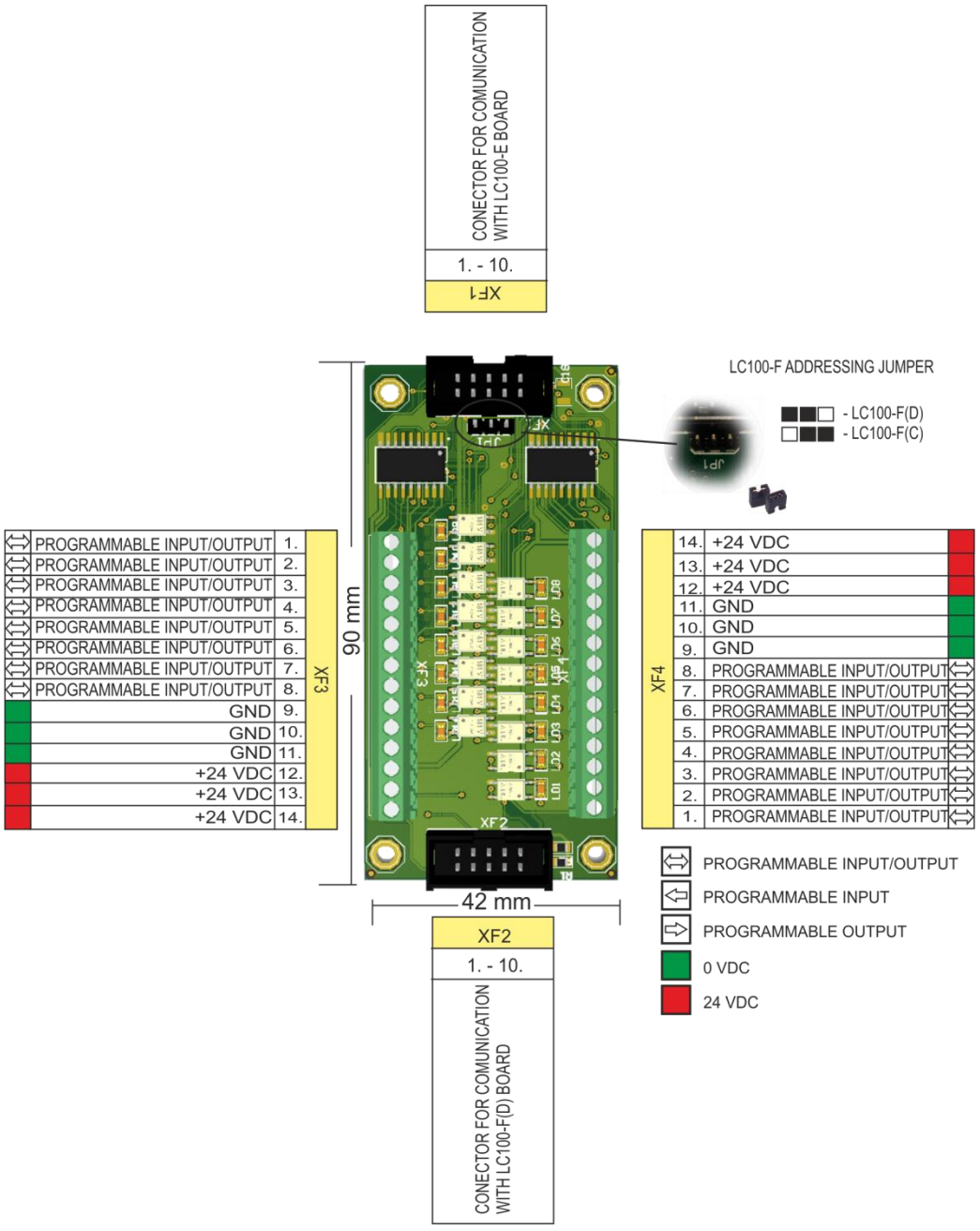
Picture 10- LC100-E6 board

2.9 LC100-F in/out board

The LC100-F board is used as a input-output board with 16 I/O pins for expansion. The system can connect up to 6 LC100-F boards.

It is possible to connect two LC100-F boards to the LC100-K, E0 and E1 boards, with the adresses „C“ and „D”.

Adressing the LC100-F boards is achieved with jumpers as shown on picture 6.



Picture 11 - LC100-F board

Connecting the LC100-F board is done with a 10 pin flat cable to the 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 the LC100-K board through connector XK12.

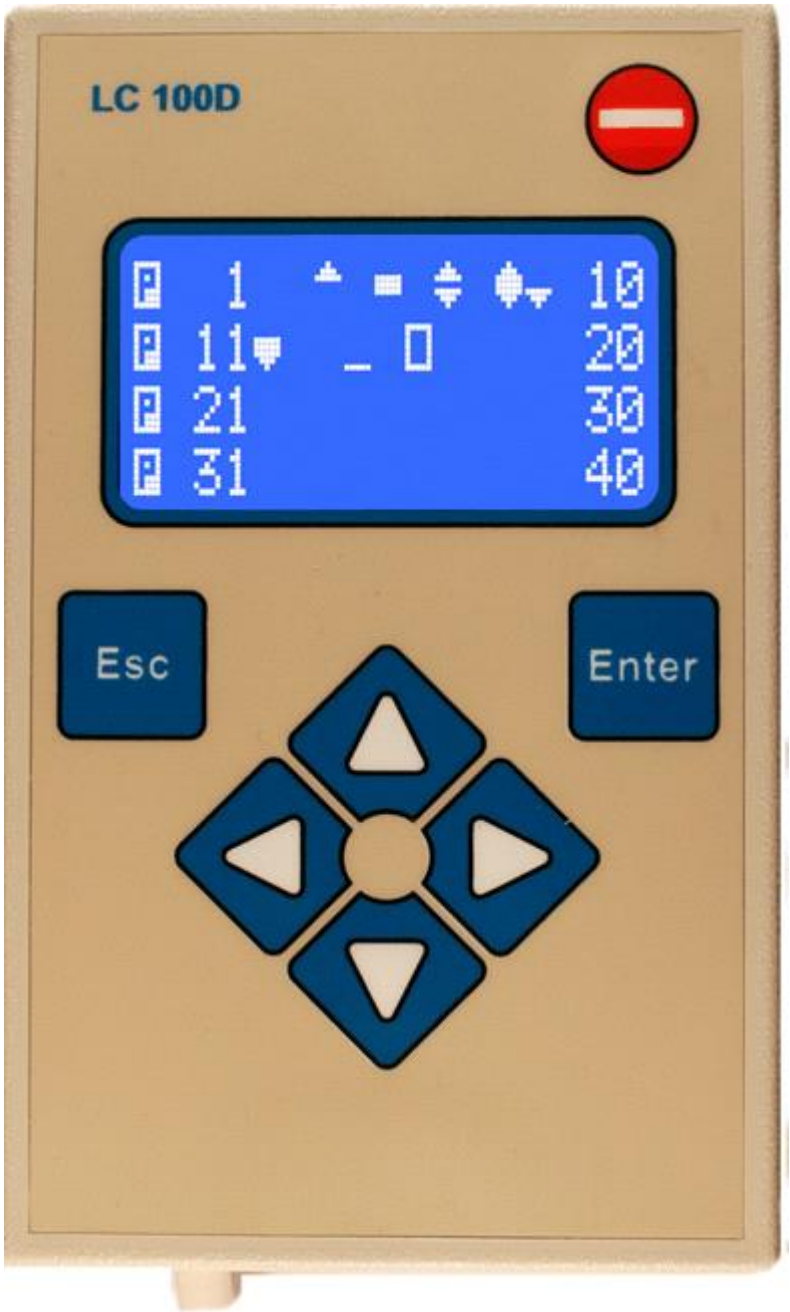
2.10 LC100-D control terminal

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

The Reset button is used for reseting some errors that can't be reset by cycling the power. By pressing and holding the reset button for 5s the processor is reset, comparable to switching the power off and on.

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

Dimensions:145x90x25mm



Picture 12 - LC100-D control terminal

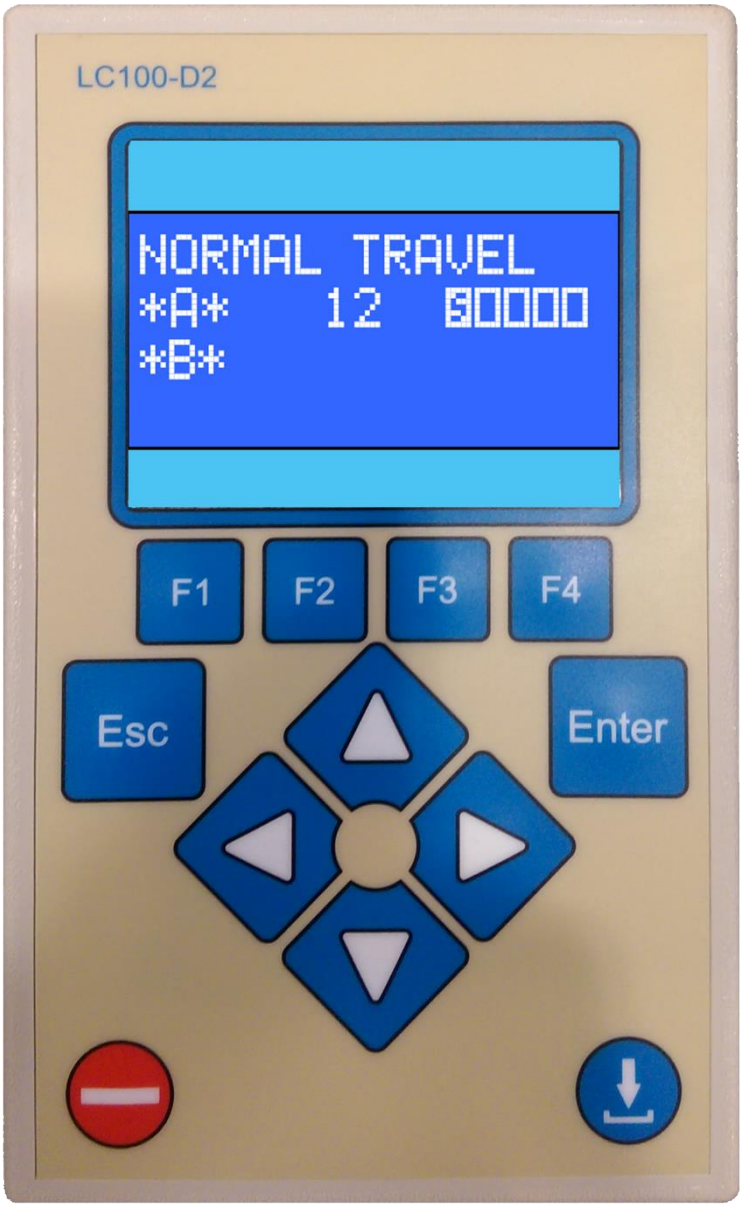
2.11 LC100-D2 control terminal

The LC100-D2 control terminal consists of a LCD display and push-buttons (ENTER, ESC, left, right, up and down navigation, reset push-button to reset the system, a download button and function buttons F1, F2, F3, F4).

The Reset button is used for reseting some errors that can't be reset by cycling the power. By pressing and holding the reset button for 5s the processor is reset, comparable to switching the power off and on.

Connecting the LC100-D2 terminal is performed by a CAN connector. The terminal can be connected anywhere on the CAN bus system.

Dimensions:145x90x25mm



Picture 13 - LC100-D2 control terminal

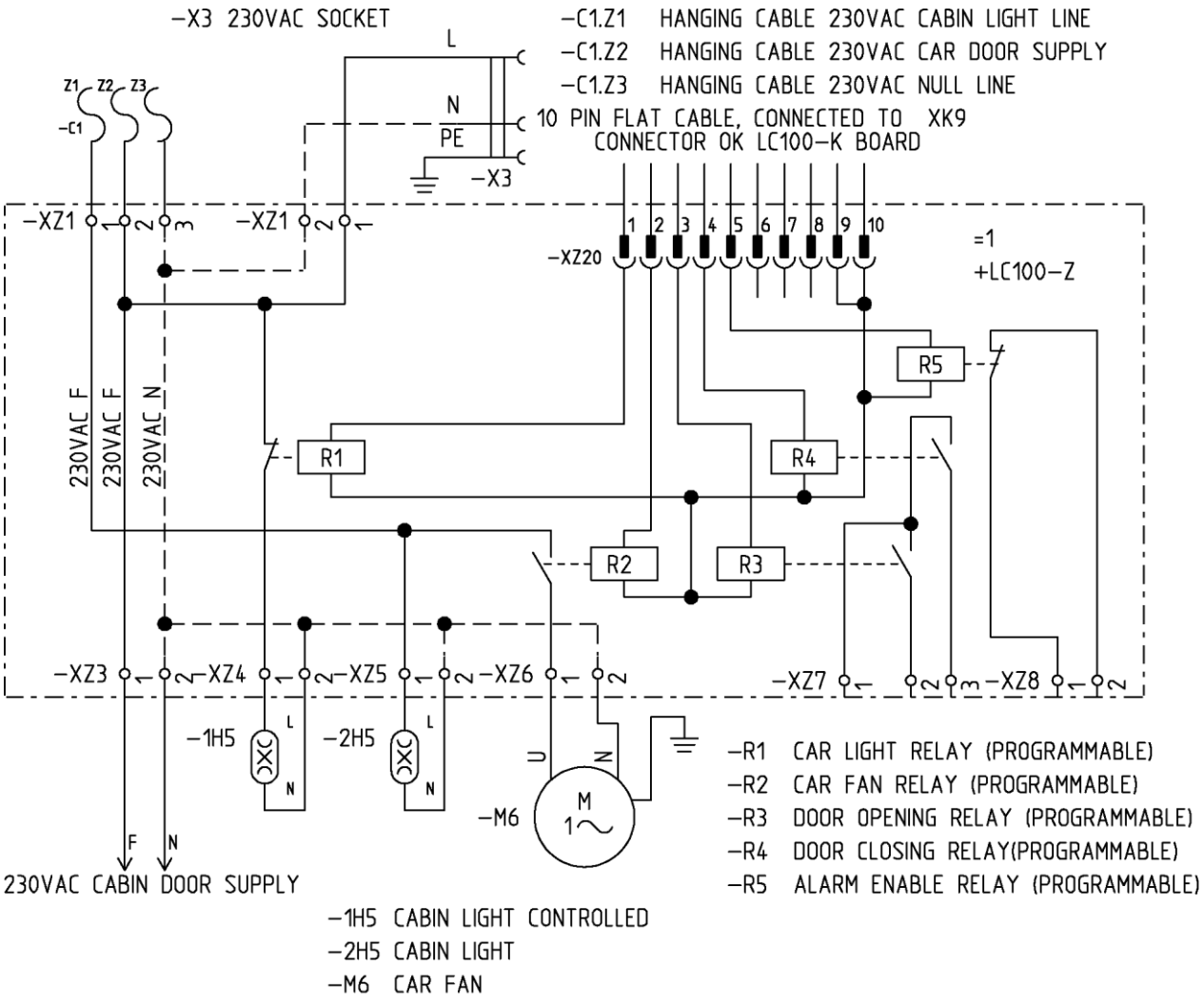
2.12 LC100-Z cabin connection board

The LC100-Z board is used for connecting the cabins safety circuit, door power, door managment, alarm pushbutton, car fan...

The dimensions of the board are 229x72mm and mounting is done on a TS35 rail using bracket plates or with spacers. (there are pre drilled holes on the modul).

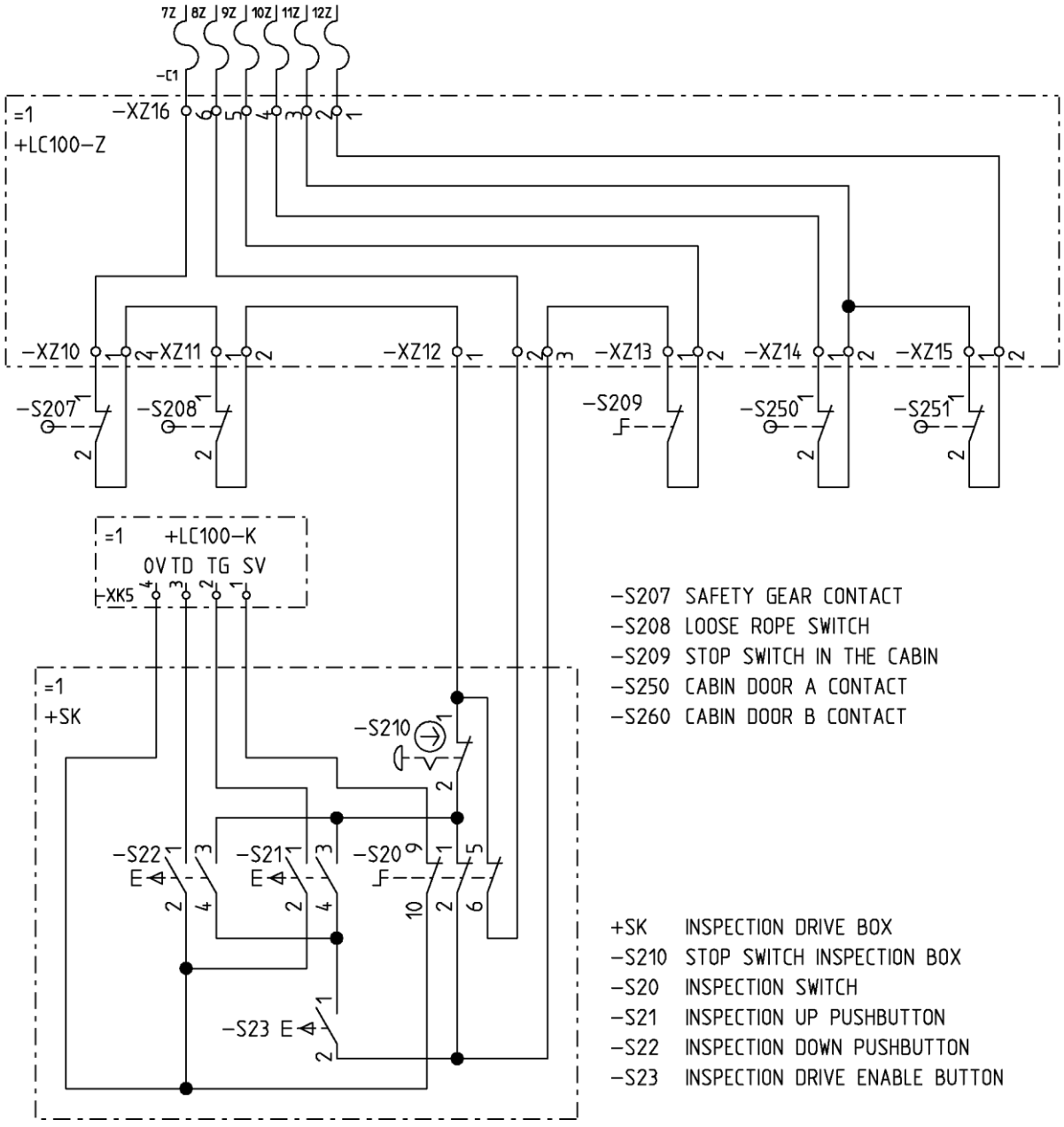
Management of the relays on the board is carried out through the input connector XZ20 which connects with the LC100-K XK9 output connector. Next to each relay is a status LED indicator.

Cabin power supply and door managmet connection diagram:



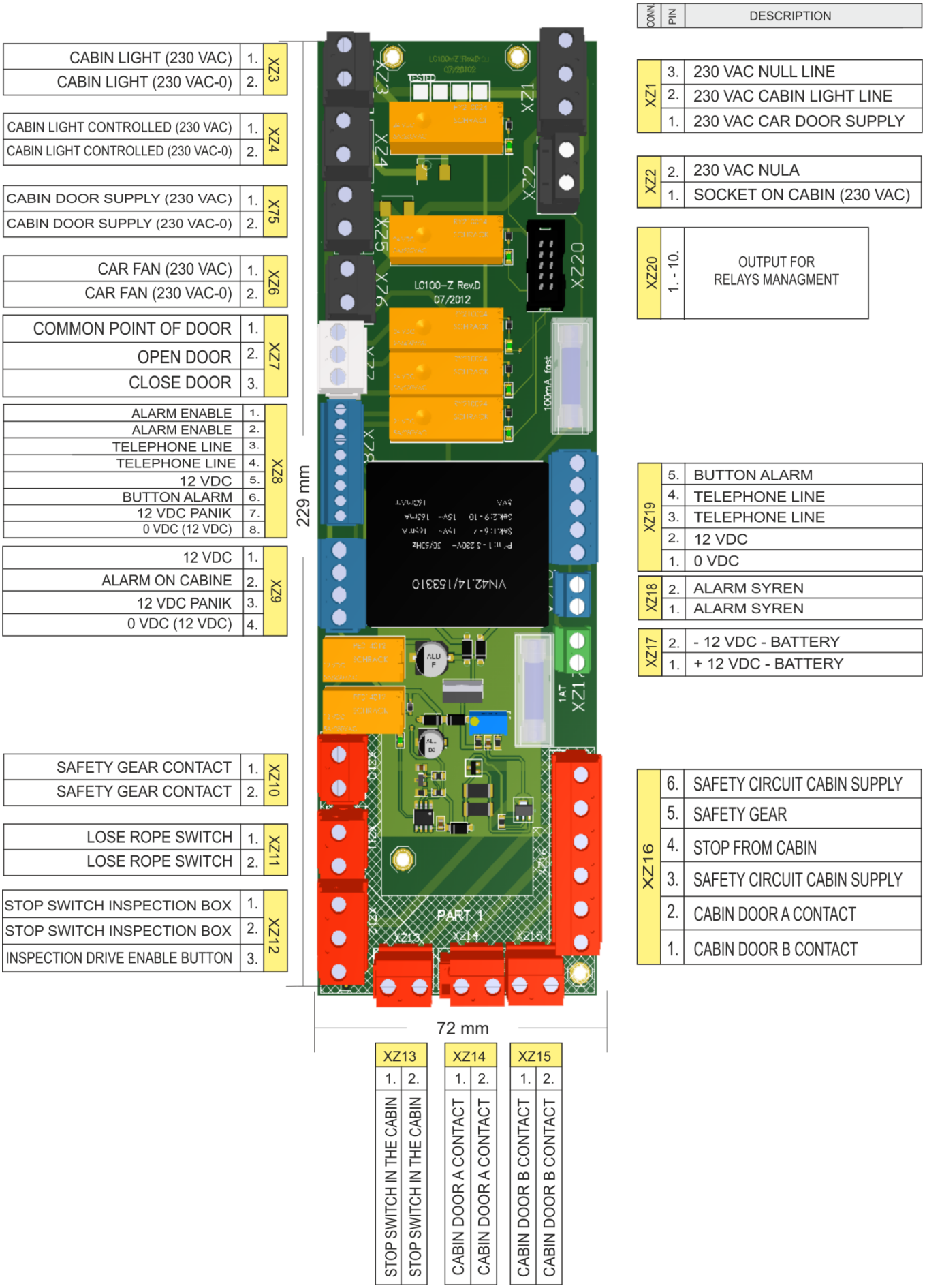
Connectors XZ10 to XZ16 are used to connect the safety circuit.

Safety circuit on the cabin connection diagram:



The LC100-Z board includes an emergency power supply circuit. The emergency power supply circuit is equipped with a 100mA fuse on the primary side of the transformer, and a 1A fuse on the side of the 12VDC power supply. The board also comes equipped with a potentiometer to set battery charging voltage.

Connection diagram for alarm and emergency light is given in LC100-S board description.

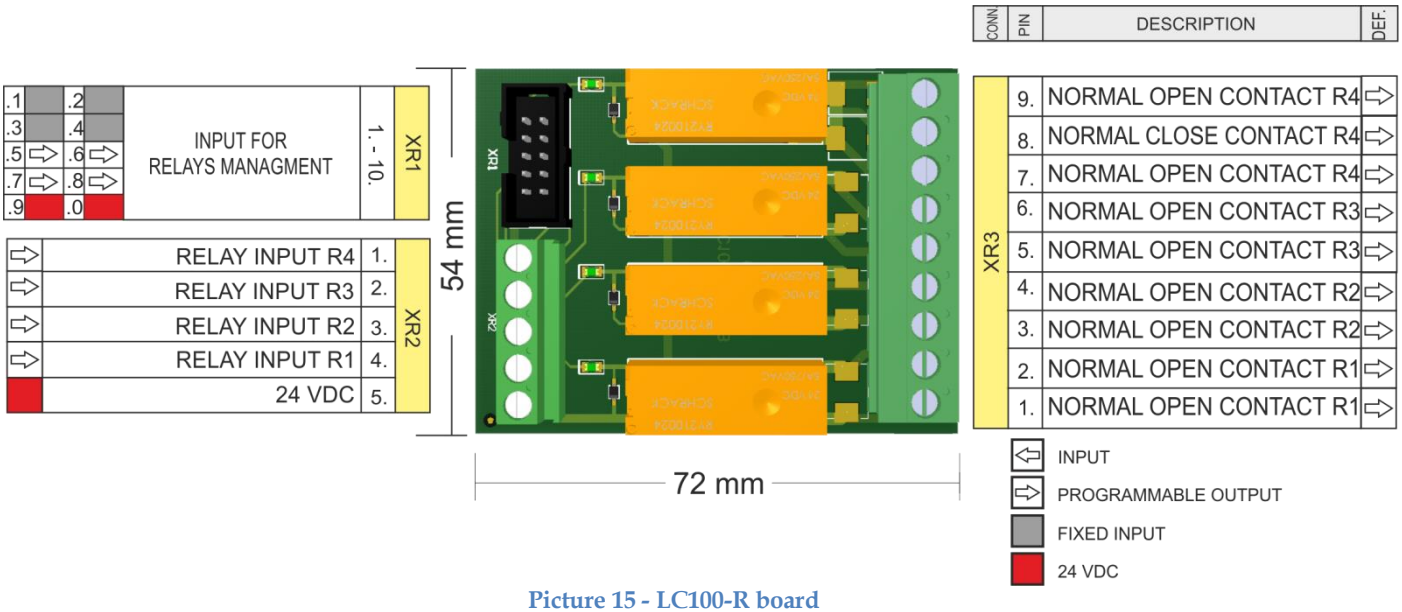


Picture 14 - LC100-Z board

2.13 LC100-R relay board with 4 relays

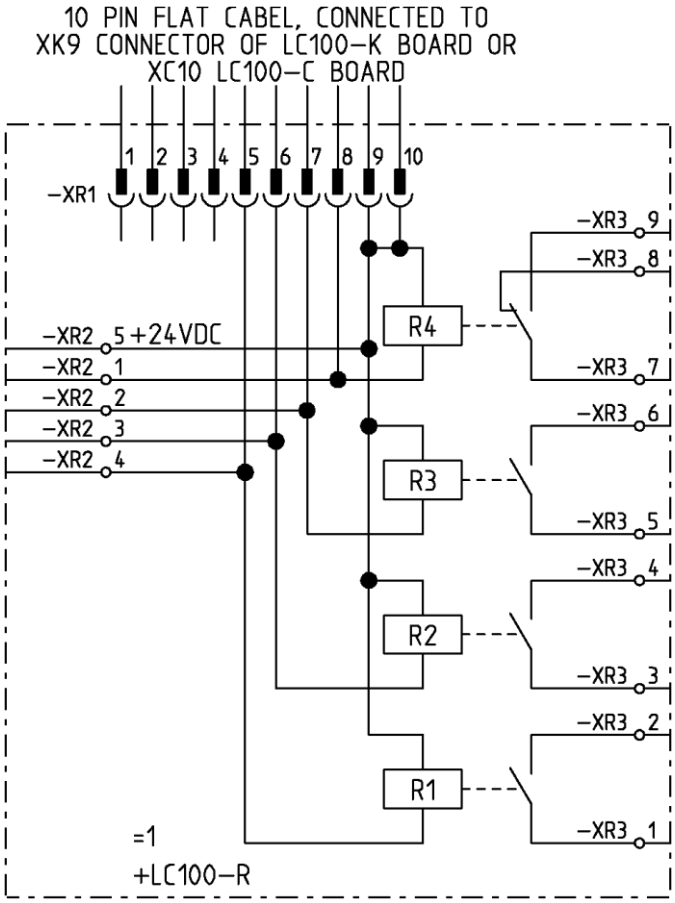
The LC100-R is a relay circuit board with 4 relays. Management of the relays is performed through the XR1 10 pin flat connector which is connected to the XC10 or XK9 connector, managment of the relays is also possible through the XR2 connector.

The Relay module consists of 4 releys – R1, R2 i R3 are NO contacts connected to XR3, while the R4 has a switching contact connected to XR3.



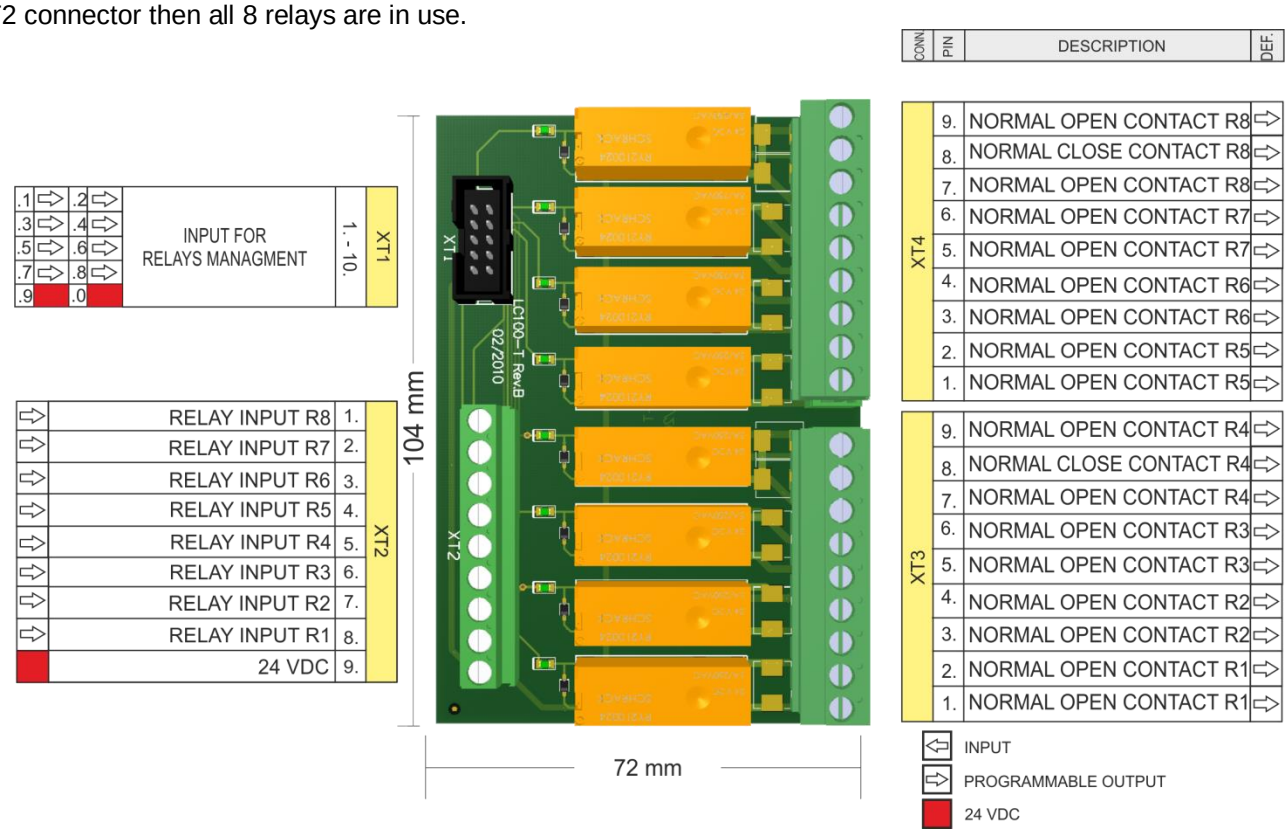
Picture 15 - LC100-R board

Relay module connection diagram:



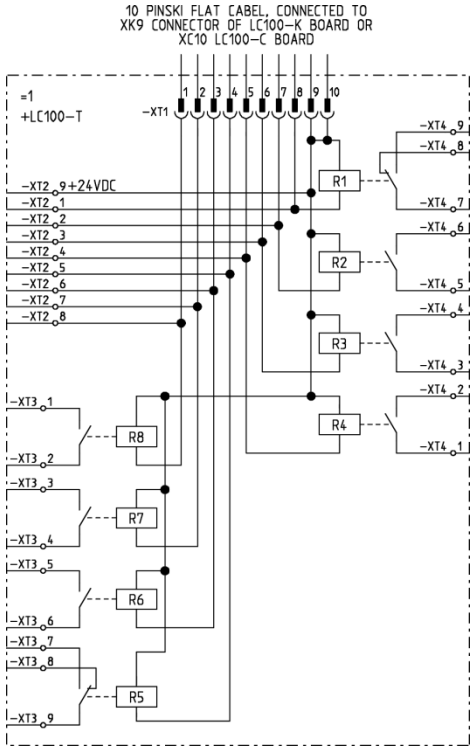
2.14 LC100-T relay board with 8 relays

The LC100-T is a relay board with 8 relays. Management of the relays is performed through the 10 pin flat connector XT1 which is connected to the XC10 or XK9 connectors. When the relays are managed trough the XC10 or XK9 connectors then on the board uses only 6 relays(relays R1 and R2 are not in use. If relays are managed trough the XT2 connector then all 8 relays are in use.



Picture 16 - LC100-T board

Relay module connection diagram:

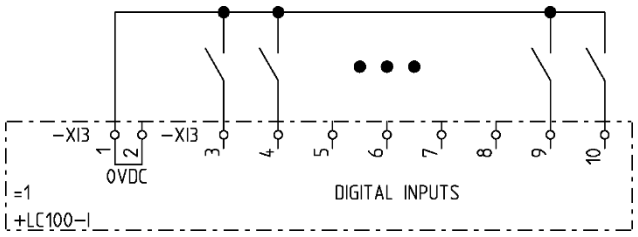


2.15 LC100-I IN/OUT board

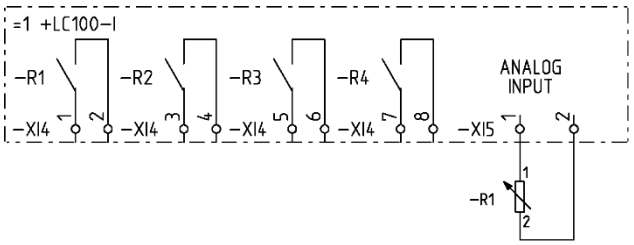
The LC100-I is a input-output board used mainly on elevators whithout a maschine room when there is a control cabinet located in the elevator shaft.

The LC100-I consist of :
- 8 digital inputs connected to the XI3 connector
- 4 relay outputs connected to XI4 connector
- 8 digital outputs connected to XI5 connector
- Analog current input ranging from 4-20 mA on the XI5 connector

Connecting the inputs:

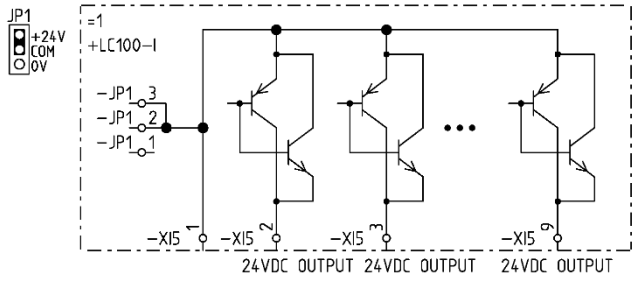


Relay outputs connection:

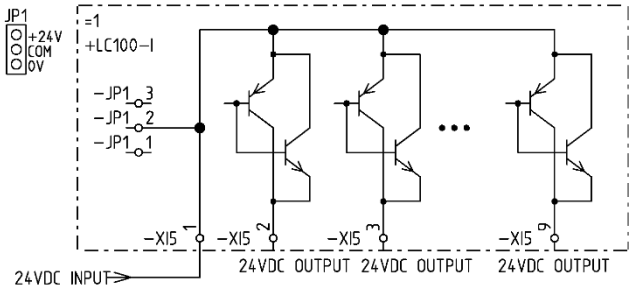


Digital output connection diagram:

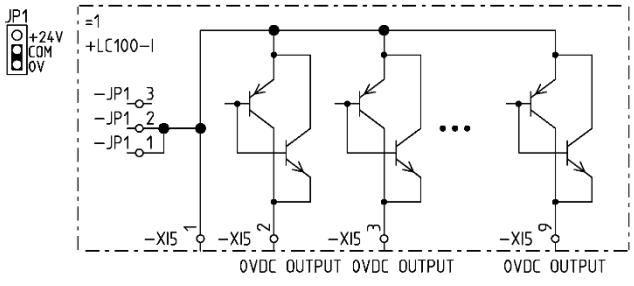
1. USING INTERNAL 24VDC FOR OUTPUTS:



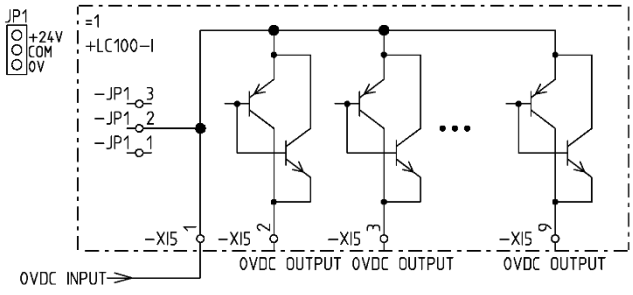
3. USING EXTERNAL 24VDC FOR OUTPUTS

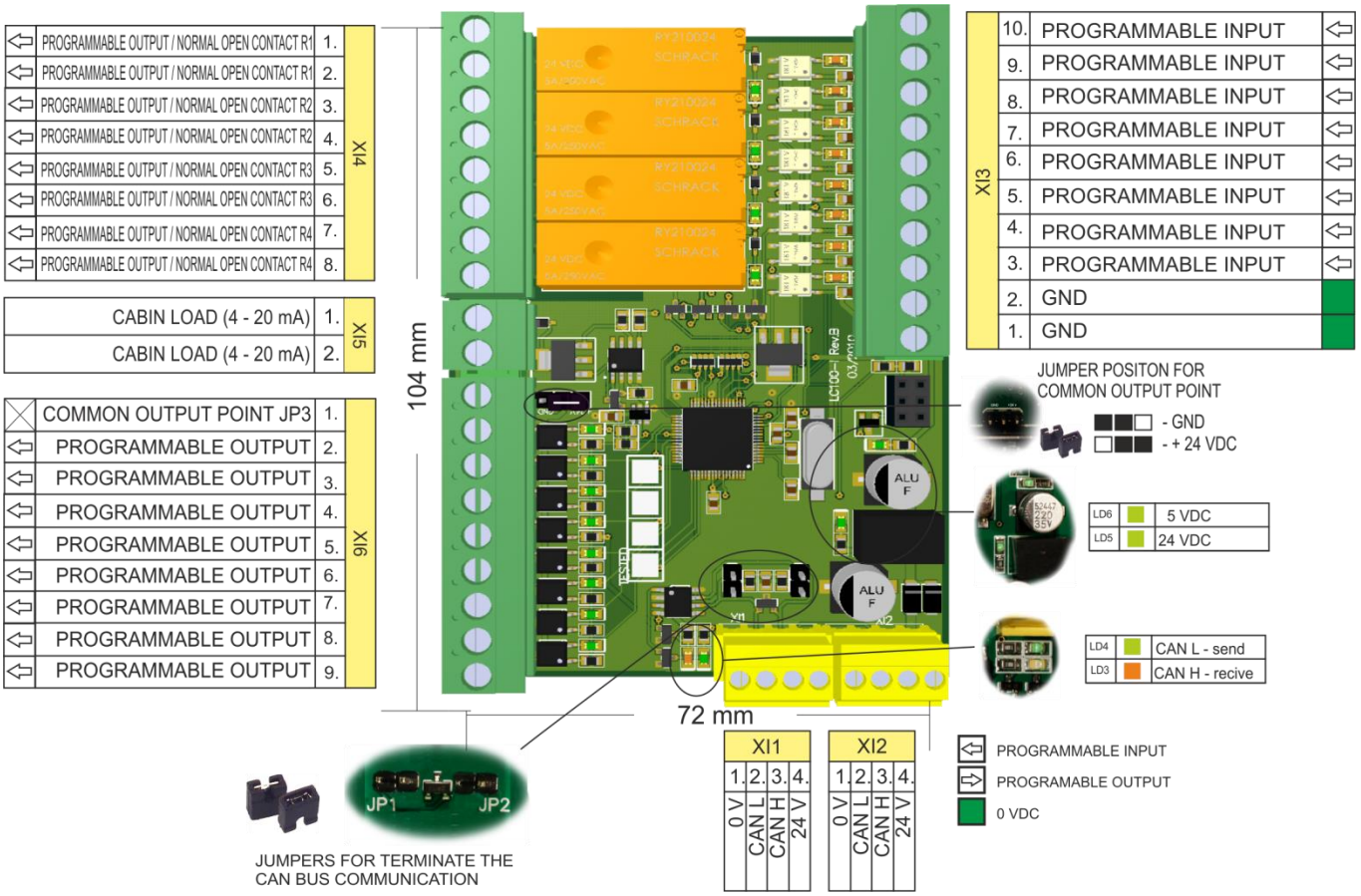


2. USING INTERNAL 0VDC FOR OUTPUTS:



4. USING EXTERNAL 0VDC FOR OUTPUTS





Picture 17 - LC100-I board

2.16 Boards for landing calls and signalization

2.16.1 LC100-M5 dot matrix display

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

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

The LC100-M5 displays are used as landing displays with connectors for connecting the landing calls. Connection to the displays is achieved trough the XC12 connector which is CAN2 bus.

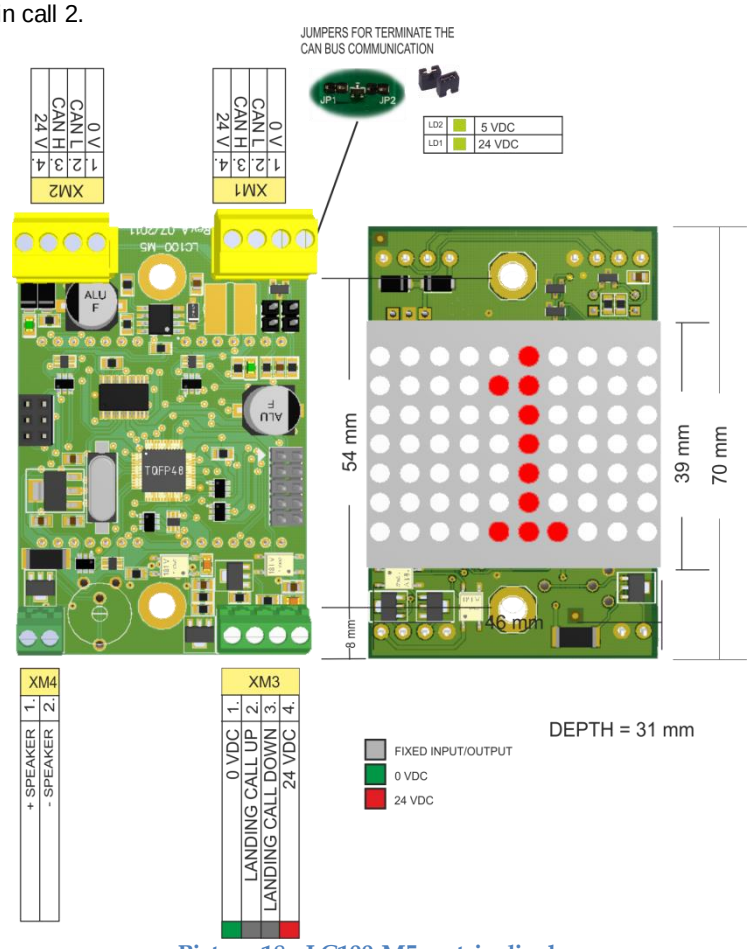
Each display is addressed for a specific floor. Addressing is done through the addressing menu.

What is shown on the displys is set trough the P-M-L modules TYPE P parameters.

In case of LOP operator elevator ***(B-1 = 0 and A-9 =A+M)***, the following connection combination is used:

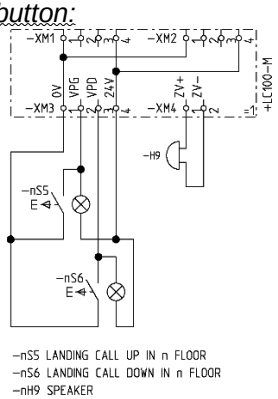
XM3.3 – External cabin call 1.

XM3.2 – External cabin call 2.



Picture 18 - LC100-M5 matrix display

Connection diagram for connecting the pushbutton:



***this product is not anymore in production**

2.16.2 LC100-M5 Rev.E dot matrix display

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

LC100-M5B Blue dot display
LC100-M5R Red dot display
LC100-M5W White dot display.

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

Each display is addressed for a specific floor. Addressing is done through the addressing menu or by buttons on the back side of the display.

What is shown on the displys is set trough the P-M-L modules TYPE P parameters.

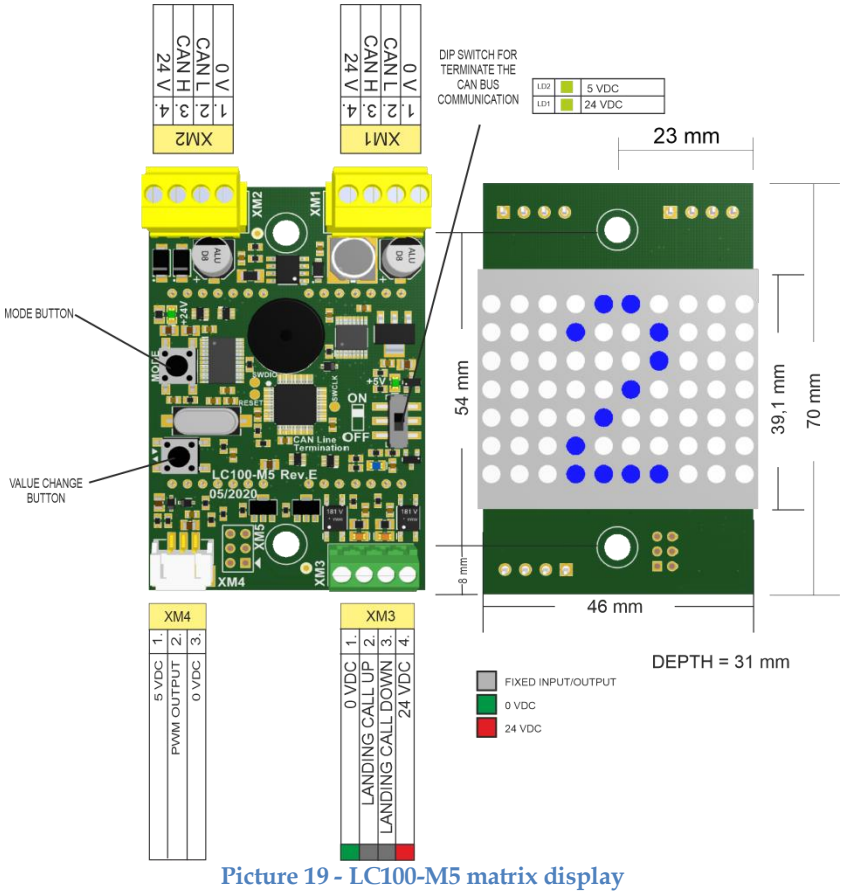
The XM4 connector is used for connecting the speaker amplifier **LC100-AP1.**

Addressing with back buttons;

1. Press and hold the Mode button for 1 sec
2. The display shows “AA” – by pressing the value button the display will change the values to AA, AB, BA, BB, CA, CB, DA, DB, AA… (The first letter represent the elevators label, the second letter represents the side of the landing call, “XY”… X=label, Y=side)
3. Press the mode button to confirm and acess the next step.
4. The display will show the station number (default 0), by pressing the value change button the value will increase, by pressing the mode button again mode the display will show the station number, pressing the value change button now will decrease the value.
5. Press mode button to save the address.

In case of LOP operator elevator ***(B-1 = 0 and A-9 =A+M)***, the following connection combination is used:

XM3.3 – External cabin call 1.
XM3.2 – External cabin call 2.



Picture 19 - LC100-M5 matrix display

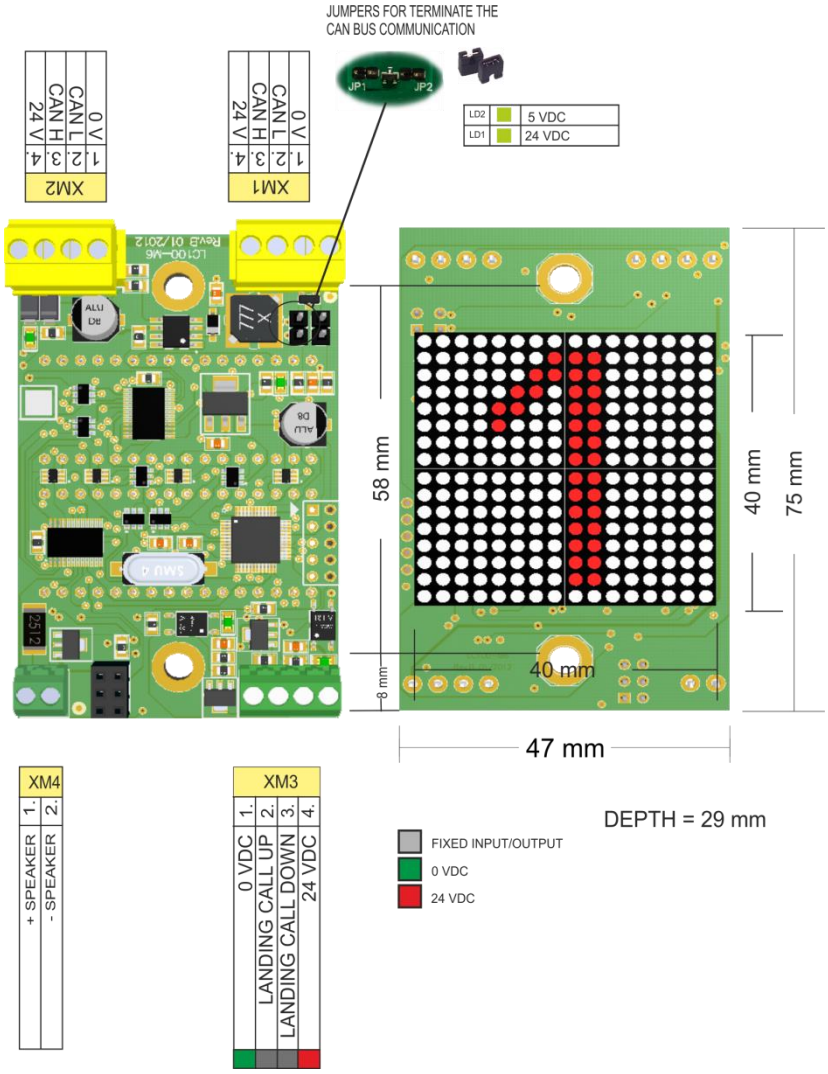
2.16.3 LC100-M6 dot matrix display

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

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

The LC100-M6 displays are used as landing displays with connectors for connecting the landing calls. Connection to the displays is made trough XC12 connector which is CAN2 bus.
Each display is addressed for a specific floor. Addressing is done through the addressing menu.
What is shown on the displys is set trough the P-M-L modules TYPE P parameters.

In case of LOP operator elevator ***(B-1 = 0 and A-9 =A+M)***, the following connection combination is used:
XM3.3 – External cabin call 1.
XM3.2 – External cabin call 2.



Picture 20 - LC100-M6 dot matrix display

*this product is not anymore in production

2.16.4 LC100-M6 Rev.E dot matrixd display

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

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

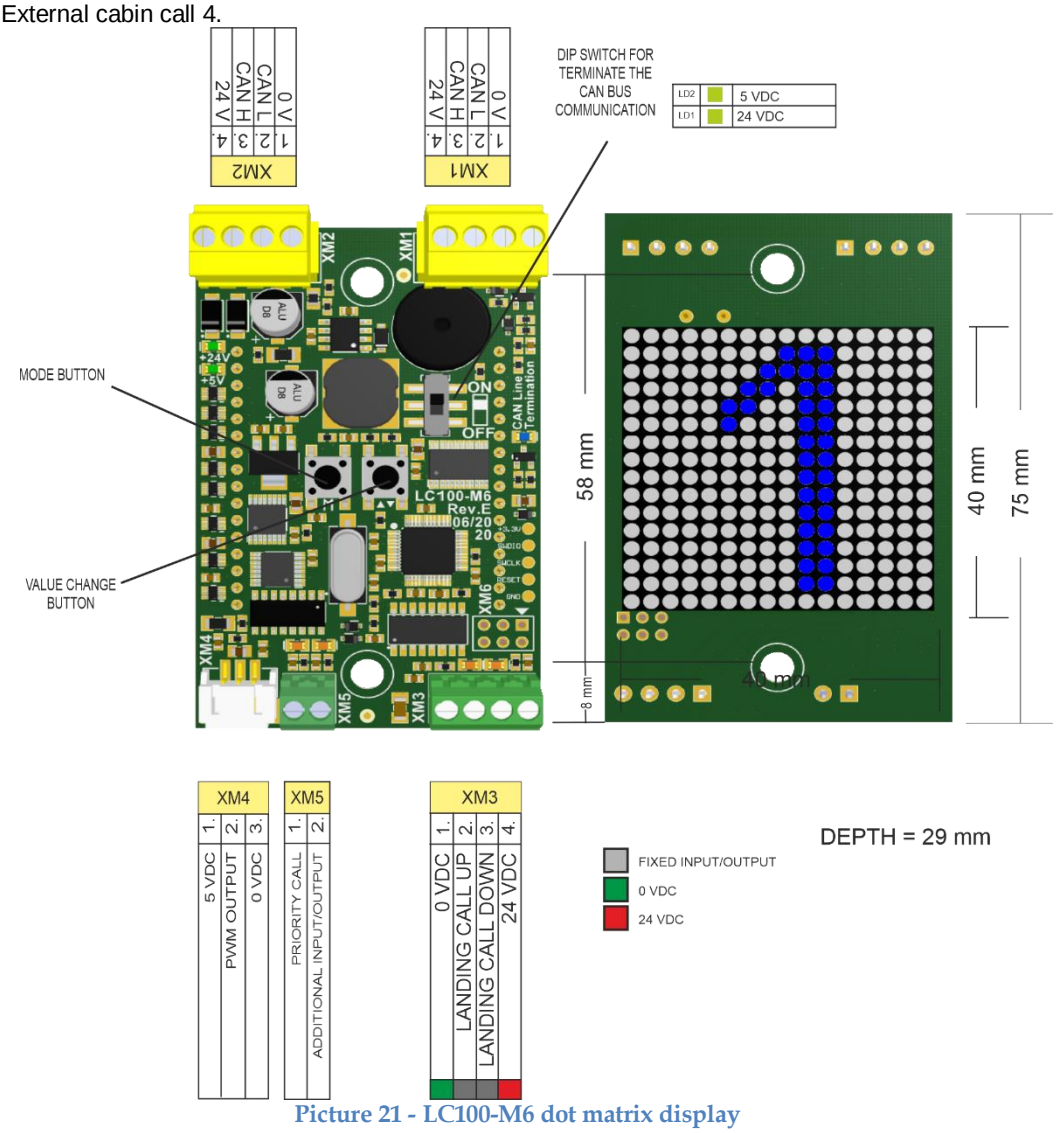
The LC100-M6 displays are used as landing displays with connectors for connecting the landing calls. Connection to the displays is made trough XC12 connector which is CAN2 bus.
Each display is addressed for a floor. Addressing is done through the aditional menue for addressing.
What is shown on the displys is set trough the P-M-L modules TYPE P parameters.

Addressing with back buttons;

1. Press and hold the Mode button for 1 sec
2. The display shows “AA” – by pressing the value button the display will change the values to AA, AB, BA, BB, CA, CB, DA, DB, AA… (The first letter represent the elevators label, the second letter represents the side of the landing call, “XY”… X=label, Y=side)
3. Press the mode button to confirm and acess the next step.
4. The display will show the station number (default 0), by pressing the value change button the value will increase, by pressing the mode button again mode the display will show the station number, pressing the value change button now will decrease the value.
5. Press mode button to save the address.

In case of LOP operator elevator ***(B-1 = 0 and A-9 =A+M)***, the following connection combination is used:

XM3.3 – External cabin call 1.
XM3.2 – External cabin call 2.
XM5.2 – External cabin call 3.
XM5.1 – External cabin call 4.



Picture 21 - LC100-M6 dot matrix display

2.16.5 LC100-M7 segment display

LC100-M7 landing display is made in two versions:

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

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

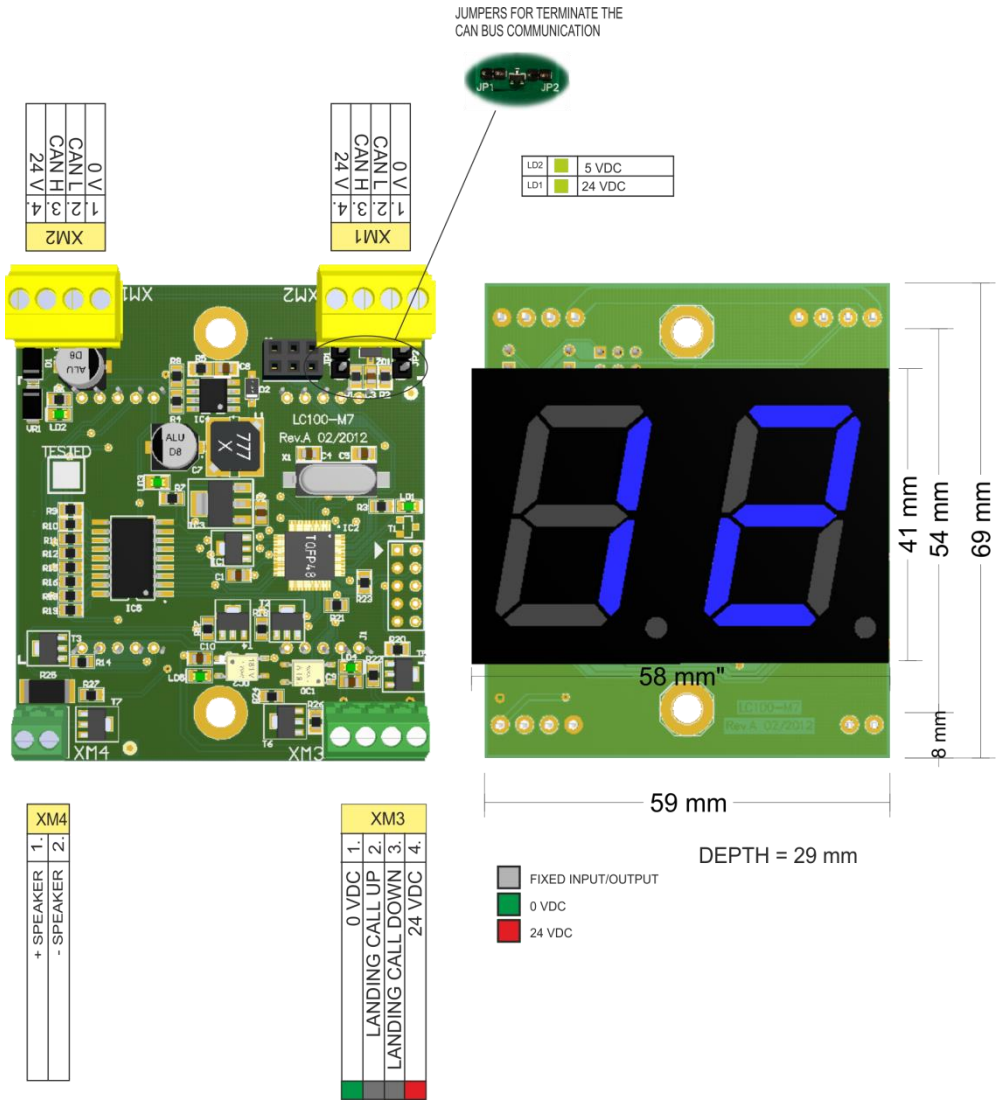
Each display is addressed for a floor. Addressing is done through the aditional menue for addressing.

What is shown on the displys is set trough the P-M-L modules TYPE P parameters.

In case of LOP operator elevator ***(B-1 = 0 and A-9 =A+M)***, the following connection combination is used:

XM3.3 – External cabin call 1.

XM3.2 – External cabin call 2.



Picture 22 - LC100-M7 segment display

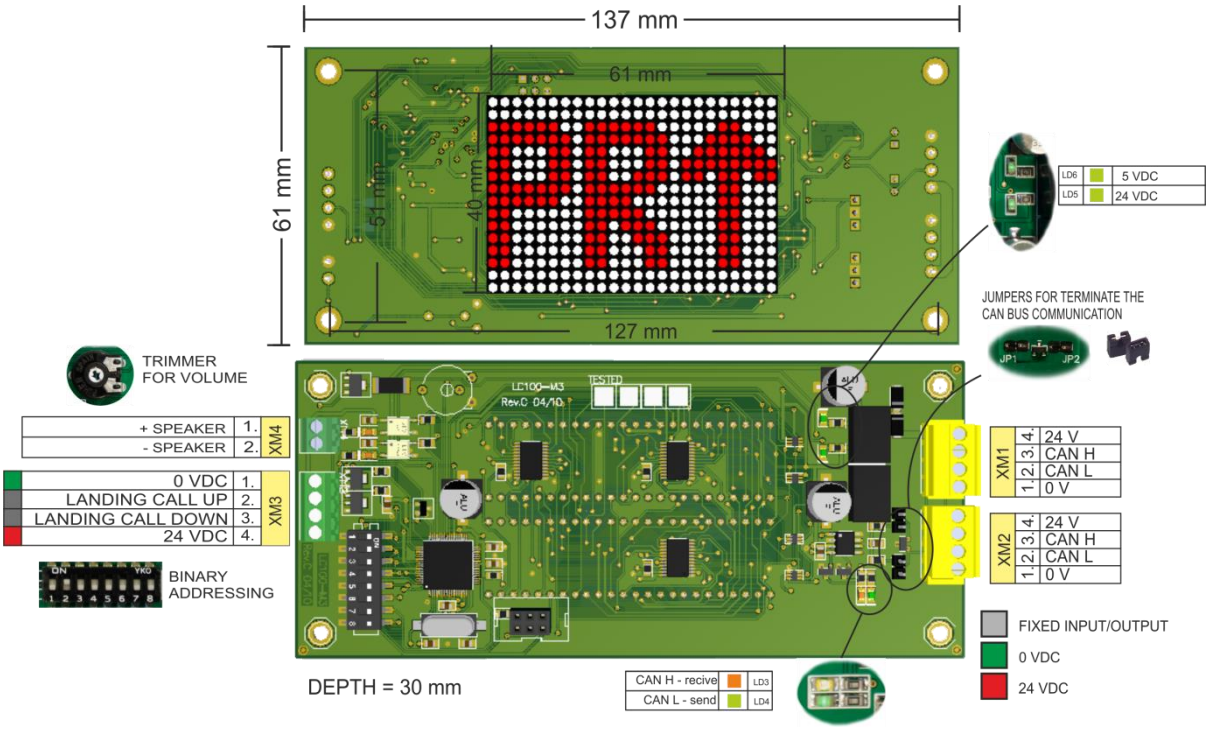
2.16.6 LC100-M3 horizontal dot matrix display

LC100-M3 board is made in two versions:

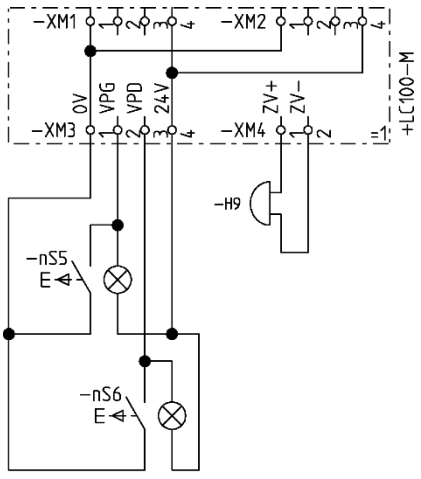
LC100-M3B	Blue DOT matrix display
LC100-M3R	Red DOT matrix display

LC100-M3 displays are used as either cabin displays and/or landing units. When used as a cabin display it is connected to CAN1 bus, and when used as a landing call unit it is connected to CAN2 bus (connector XC12).
Every landing call unit is addressed separately, adresses are assigned in the ADRESSING TABLE.
To ensure that the landig calls are processed through the landing units, the parameter A-9 must be set.

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



Picture 21 - LC100-M3 dot matrix display



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

***this product is not anymore in production**

2.16.7 LC100-M8 horizontal dot matrix display

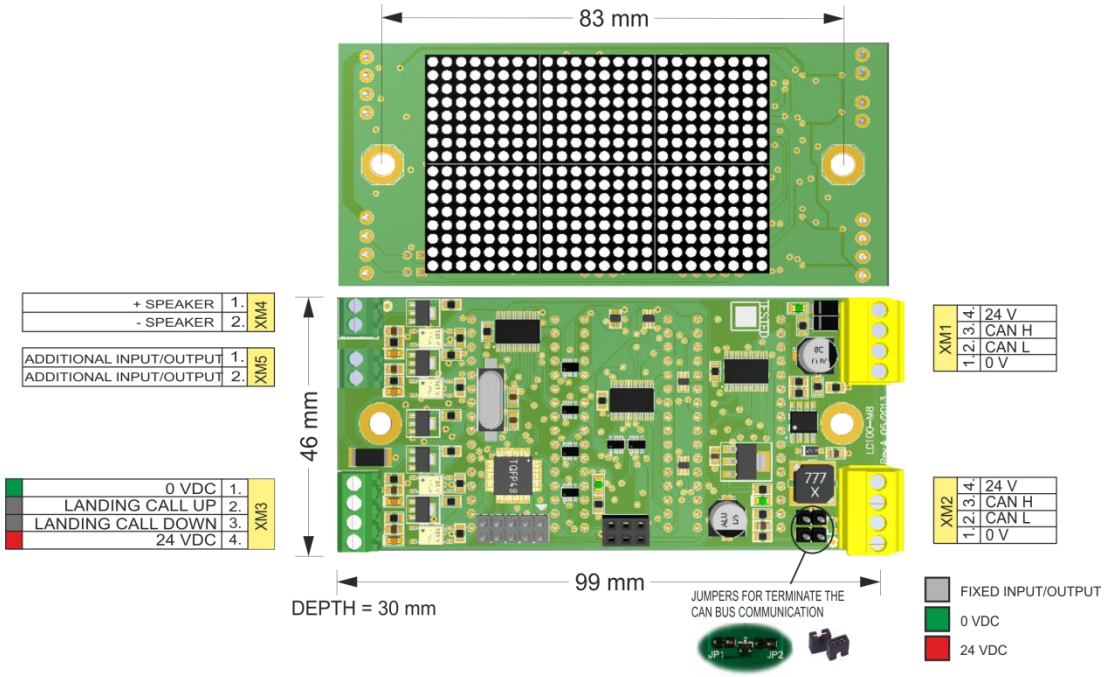
LC100-M8 board is produced in two versions:

LC100-M8B Blue DOT matrix display
LC100-M8R Red DOT matrix display
LC100-M8W White DOT matrix display

LC100-M8 displays are used as either cabin displays and/or landing units. When used as a cabin display it is connected to CAN1 bus, and when used as a landing call unit it is connected to CAN2 bus (connector XC12).
Every landing call unit is addressed separately, adressesing is achieved trough the addressing menu.
To ensure that the landig calls are processed through the landing units, the parameter A-9 must be set.

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

In case of LOP operator elevator ***(B-1 = 0 and A-9 =A+M)***, the following connection combination is used:
XM3.3 – External cabin call 1.
XM3.2 – External cabin call 2.
XM5.2 – External cabin call 3.
XM5.1 – External cabin call 4.



Picture 22 - LC100-M8 dot matrix display

***this product is not anymore in production**

2.16.8 LC100-M8 Rev.E horizontal dot matrix display

LC100-M8 board is produced in two versions:

LC100-M8B Blue DOT matrix display
LC100-M8R Red DOT matrix display
LC100-M8W White DOT matrix display

LC100-M8 displays are used as either cabin displays and/or landing units. When used as a cabin display it is connected to CAN1 bus, and when used as a landing call unit it is connected to CAN2 bus (connector XC12).
Every landing call unit is addressed separately, adressesing is achieved trough the addressing menu.
To ensure that the landig calls are processed through the landing units, the parameter A-9 must be set.

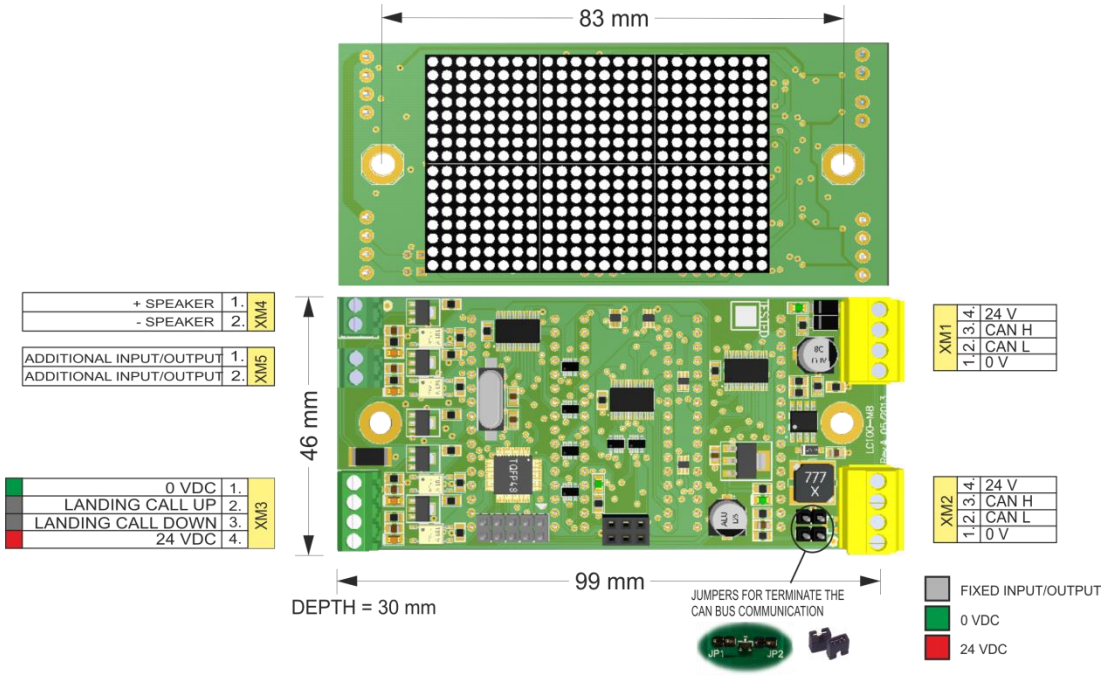
Configuration of the units is achieved through the P-M-L module TYPE-P parameters.

Addressing with back buttons;

1. Press and hold the Mode button for 1 sec
2. The display shows “AA” – by pressing the value button the display will change the values to AA, AB, BA, BB, CA, CB, DA, DB, AA… (The first letter represent the elevators label, the second letter represents the side of the landing call, “XY”… X=label, Y=side)
3. Press the mode button to confirm and acess the next step.
4. The display will show the station number (default 0), by pressing the value change button the value will increase, by pressing the mode button again mode the display will show the station number, pressing the value change button now will decrease the value.
5. Press mode button to save the address.

In case of LOP operator elevator ***(B-1 = 0 and A-9 =A+M)***, the following connection combination is used:

XM3.3 – External cabin call 1.
XM3.2 – External cabin call 2.
XM5.2 – External cabin call 3.
XM5.1 – External cabin call 4.



Picture 23 - LC100-M8 dot matrix display

2.16.9 LC100-L1 TFT display

The LC100-L1 displays are used as landing displays with connectors for connecting the landing calls. Connection to the displays is achieved trough the XC12 connector which is CAN2 bus(connector XC12).

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

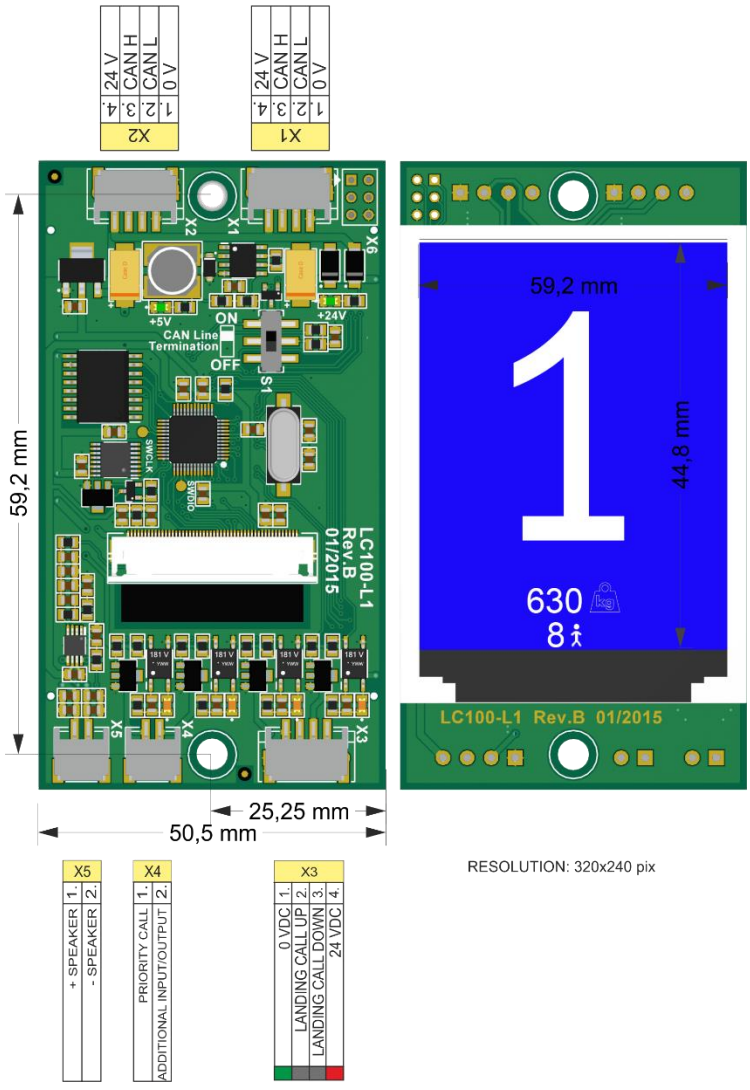
What is shown on the displys is set trough the P-M-L modules TYPE P parameters.

Every landing call unit is addressed separately, adressesing is achieved trough the addressing menu.

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

In case of LOP operator elevator ***(B-1 = 0 and A-9 =A+M)***, the following connection combination is used:

X3.3 – External cabin call 1.
X3.2 – External cabin call 2.
X4.2 – External cabin call 3.
X4.1 – External cabin call 4.



Picture 23 - LC100-L1 TFT display

2.16.10 LC100-L2 TFT display

LC100-L2 displays are used as either cabin displays and/or landing units. When used as a cabin display it is connected to CAN1 bus, and when used as a landing call unit it is connected to CAN2 bus (connector XC12).

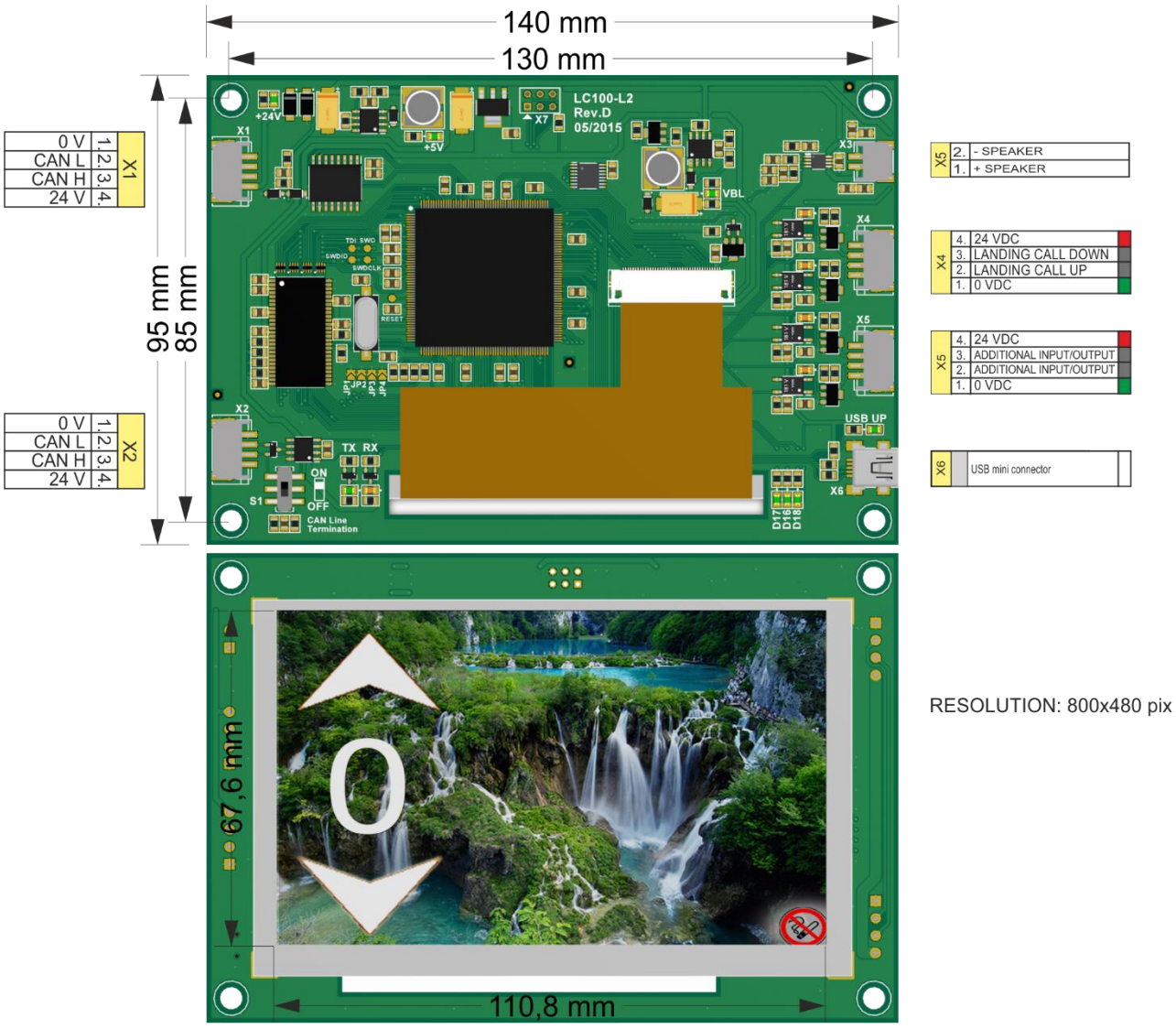
Every landing call unit is addressed separately, adressesing is achieved trough the addressing menu.

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

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

In case of LOP operator elevator ***(B-1 = 0 and A-9 =A+M)***, the following connection combination is used:

X4.3 – External cabin call 1.
X4.2 – External cabin call 2.
X5.2 – External cabin call 3.
X5.1 – External cabin call 4.



Picture 24 - LC100-L2 TFT display

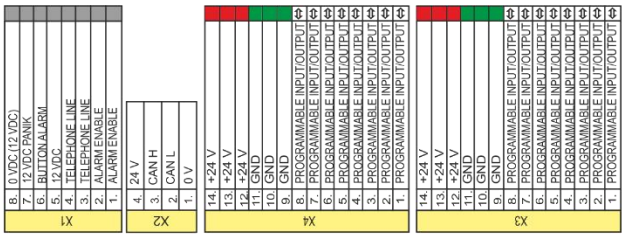
2.16.11 LC100-L3 TFT display

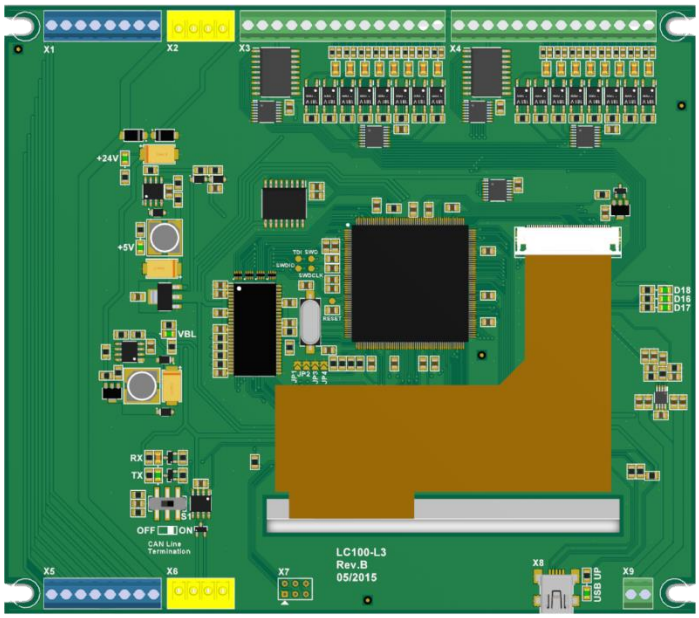
LC100-L3 displays are used as either cabin displays and/or landing units. When used as a cabin display it is connected to CAN1 bus, and when used as a landing call unit it is connected to CAN2 bus (connector XC12).

Every landing call unit is addressed separately, adressesing is achieved trough the addressing menu.

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

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





RESOLUTION: 800x480 pix

2.17 Adressing the landing call units (LC100-M boards)

Adressing is achieved via microswitches on the landing call units (LC100M boards).

Switches S1 to S6 are used for addressing the landing units, adressing is binary coded as shown in the table below.

STATION	S1	S2	S3	S4	S5	S6	STATION	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

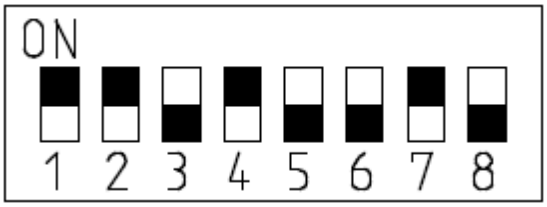
Switch S7 is used for adressing the side when using opposite calls.

Side A S7 set to OFF
Side B S7 set to ON

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

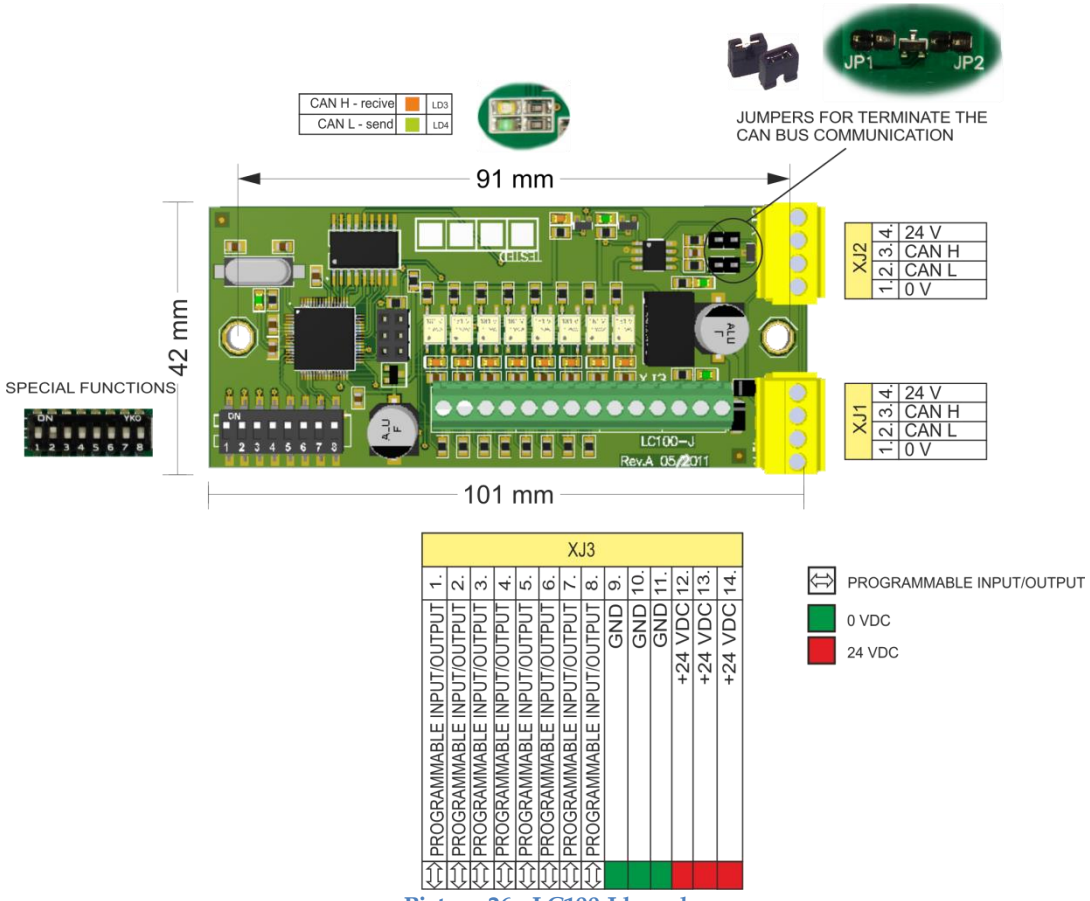
Elevator A S8 set to OFF
Elevator B S8 set to ON

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



2.18 LC100-J input/output board

LC100-I board is used as an 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.



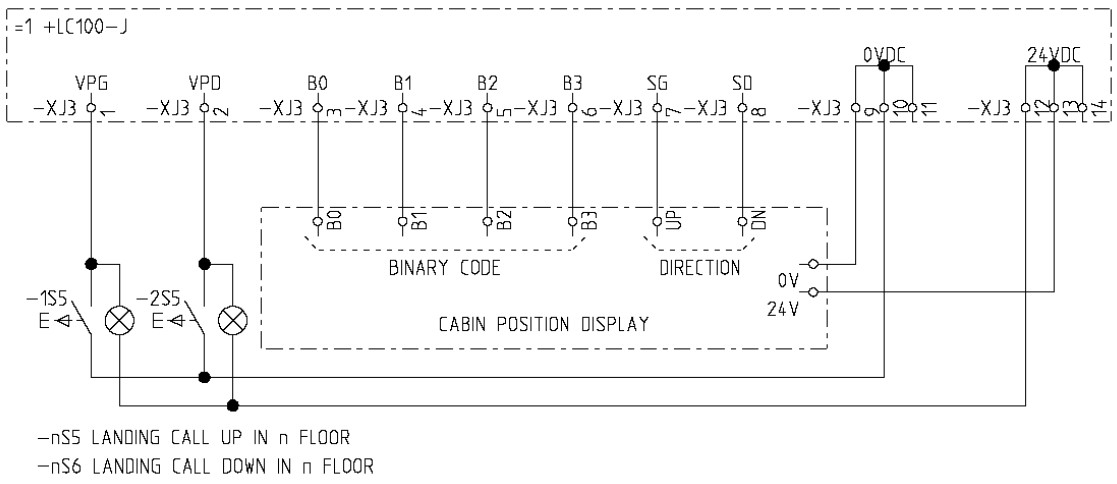
Picture 26 - LC100-J board

Aplication 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 the inputs and outputs are set as shown on the connection diagram.

Connection diagram:



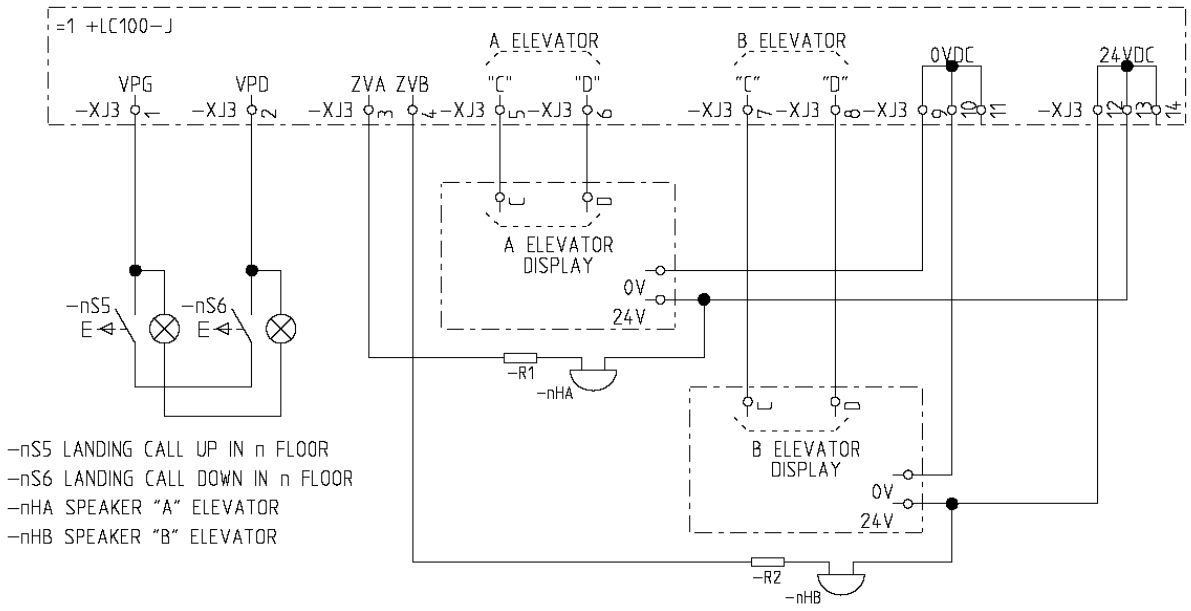
2. Floor units DUPLEX elevator with *„C“ i „D“ protocol displays*.

Floor units are coded according to the addressing table.

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

When connecting the speakers to the XJ3.3 and XJ3.4 pins, a resistor with a minimal value of 100Ω is needed .

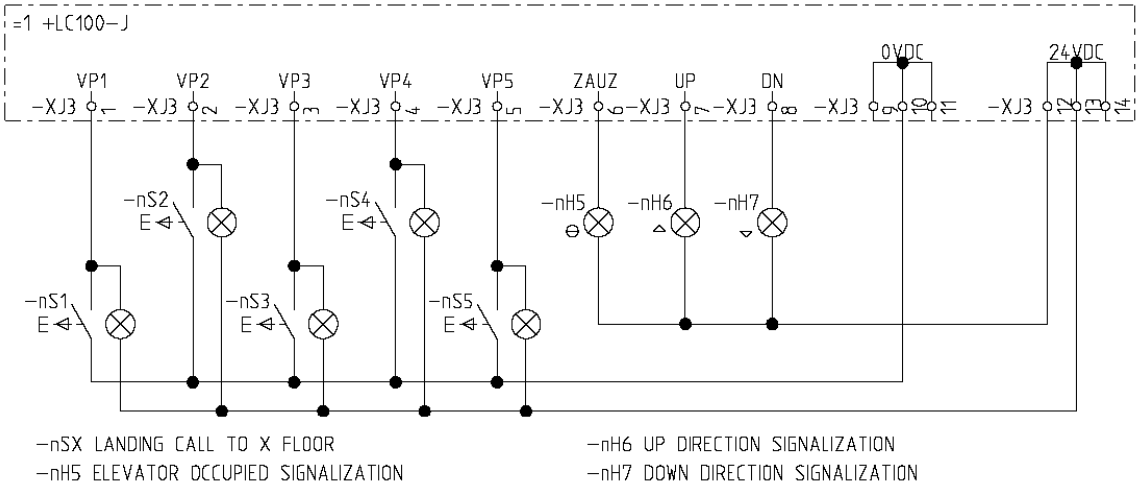
Connection diagram:



3. Floor units for elevators without cabin calls.

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

Connection diagram:

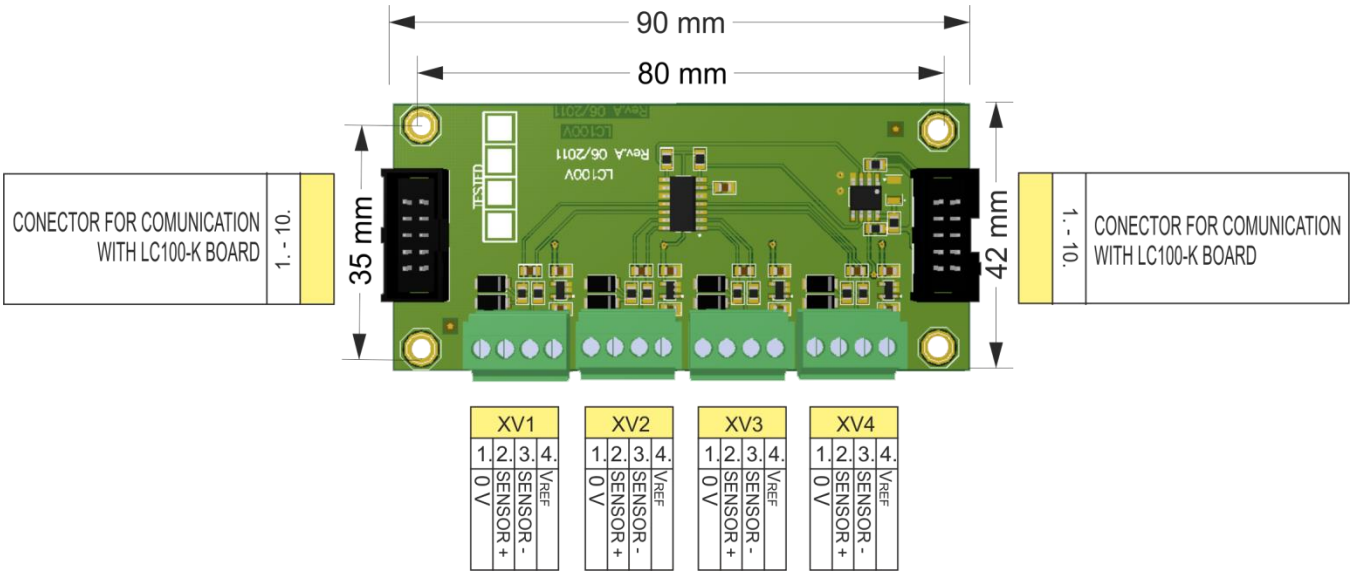


NOTE! These are some examples on using the LC100-J board, other configurations are made on request.

2.19 LC100-V load measurement board

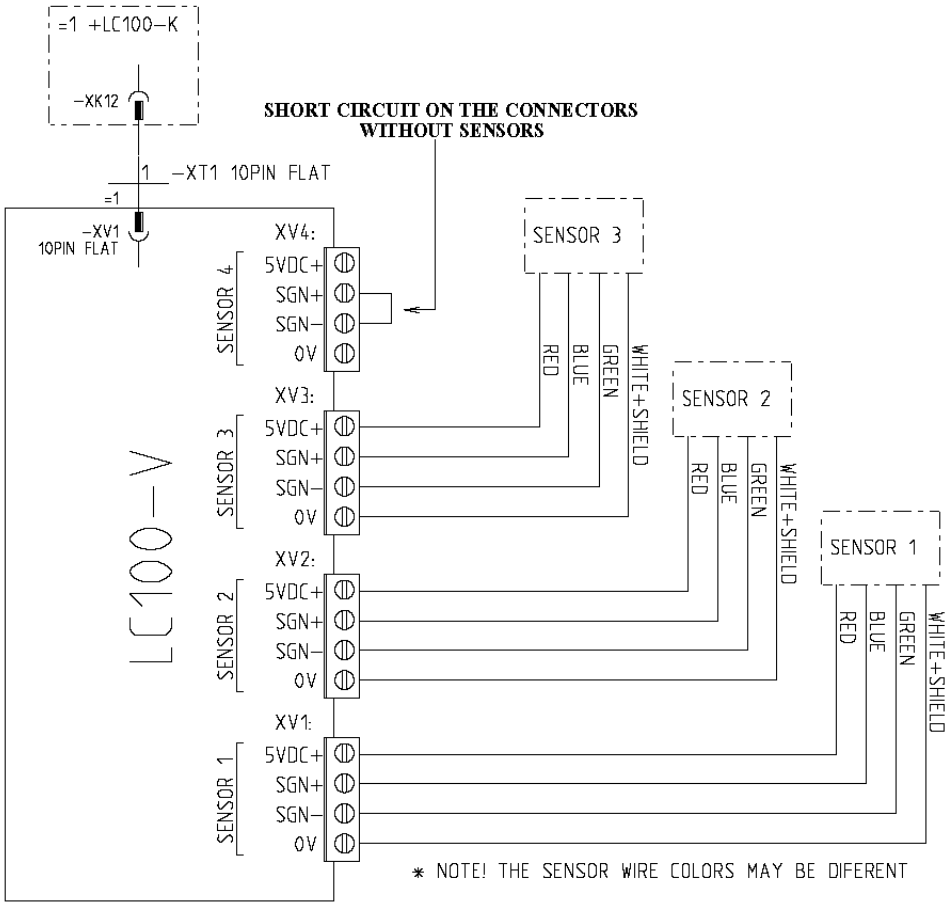
The LC100-V board is used to connect the load measurement cells. It has four connectors for connecting up to four cells and a flat connector for connecting to the LC100-K board.

Programming the load measurement is done with the LC100-D2 keyboard as explained in additional menu, section **5/7 LOAD MEASUREMENT**.



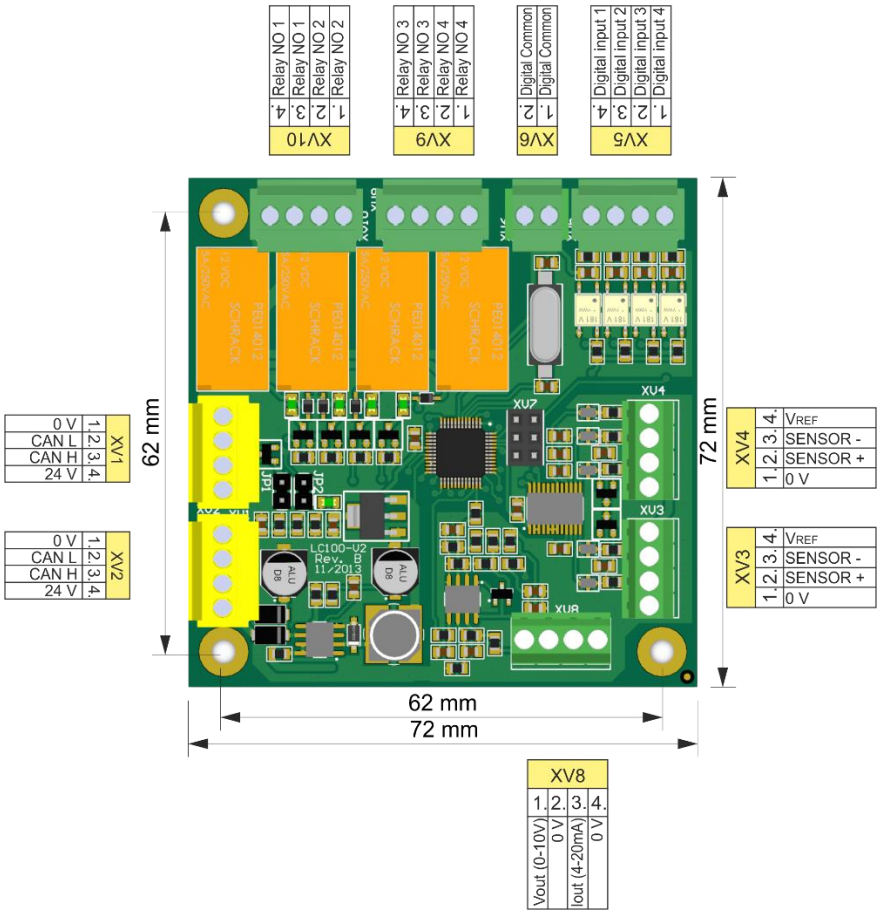
Picture 27 LC100-V board

Connection diagram for LC100-V:



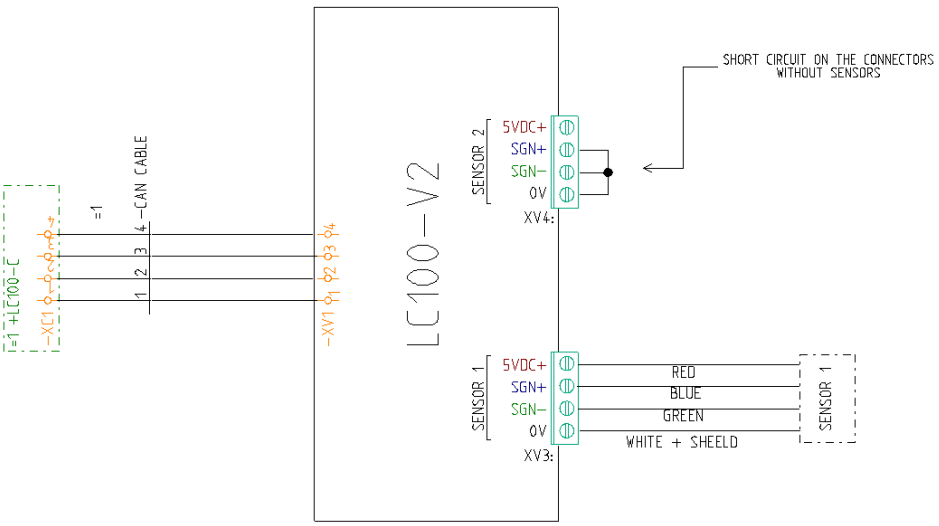
2.20 LC100-V2 load measurement board

LC100-V2 board is used to connect the load measurement cells.
Programming the load measurement is done with the LC100-D2 keyboard as explained in additional menu, section **5/7 LOAD MEASUREMENT**.



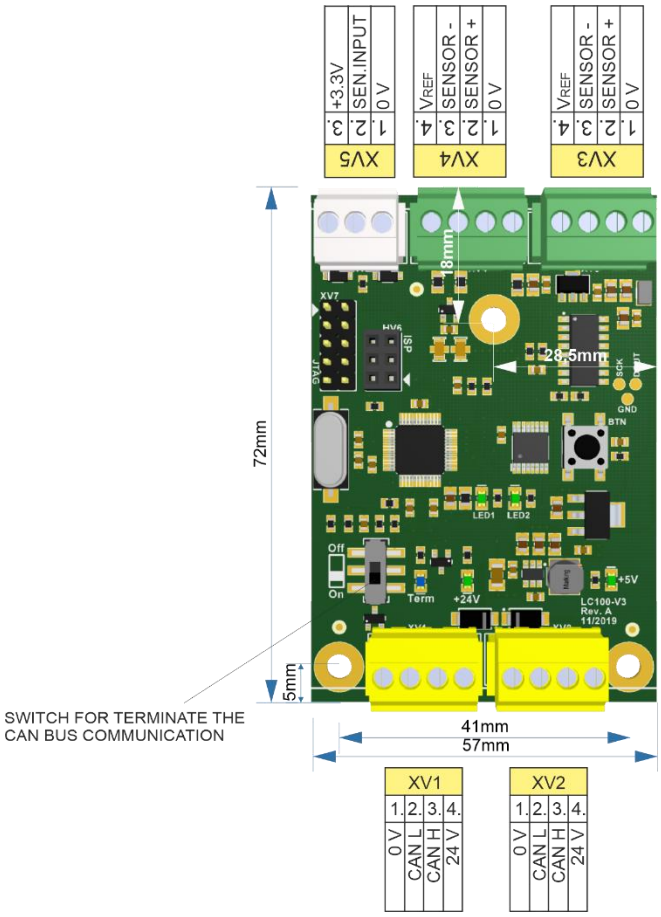
Picture 28 LC100-V2 board

Connection diagram for LC100-V2:



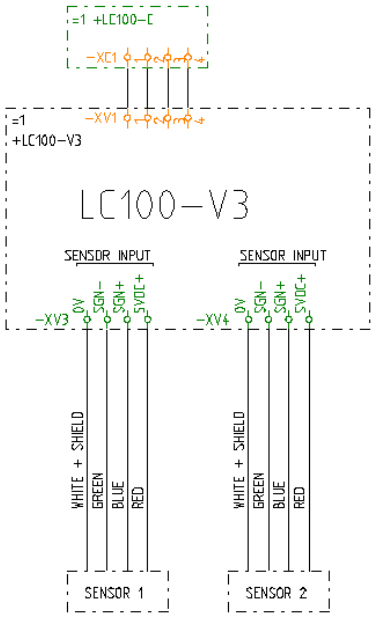
2.21 LC100-V3 load measurement board

LC100-V3 board is used to connect the load measurement cells.
Programming the load measurement is done with the LC100-D2 keyboard as explained in additional menu, section **5/7 LOAD MEASUREMENT**.



Picture 33 LC100-V3 board

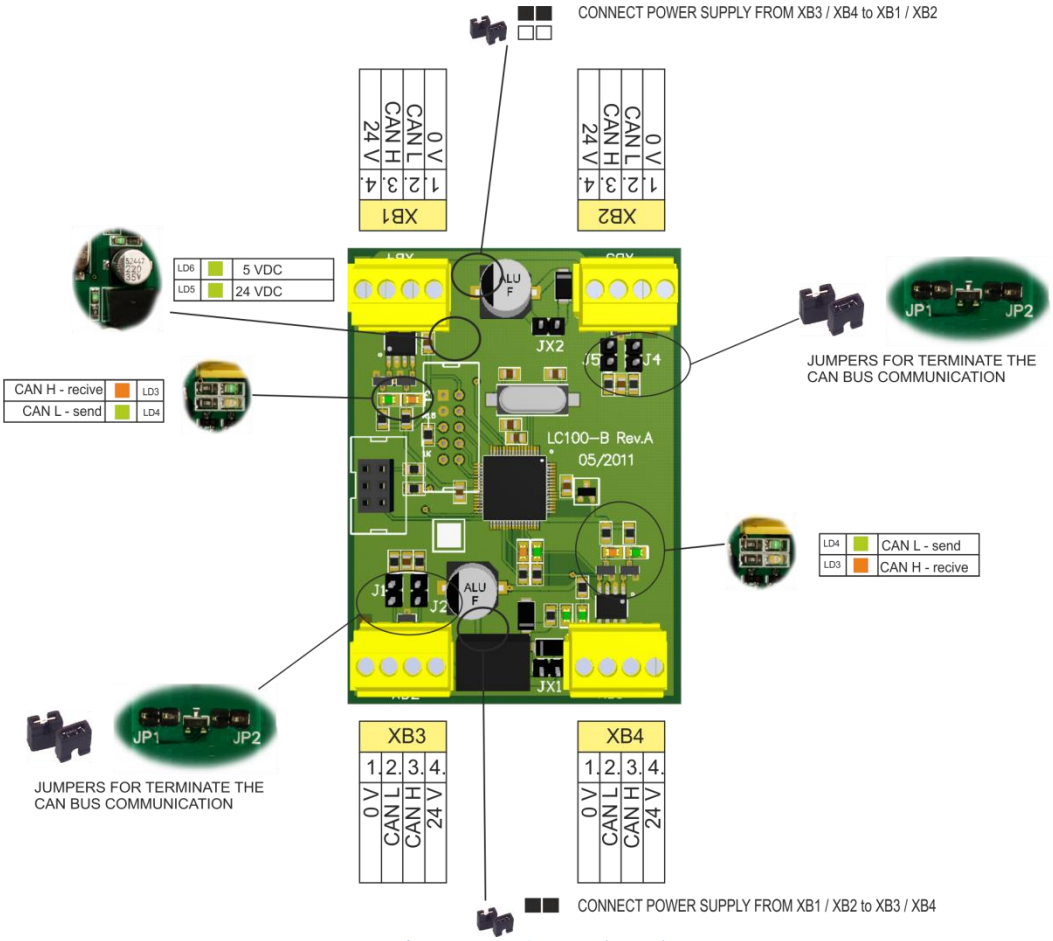
Connection diagram for LC100-V3:



2.22 LC100-B CAN bridge board

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

The board is connected to CAN1 bus of the LC100 trough the XB1 and/or XB2 connector.



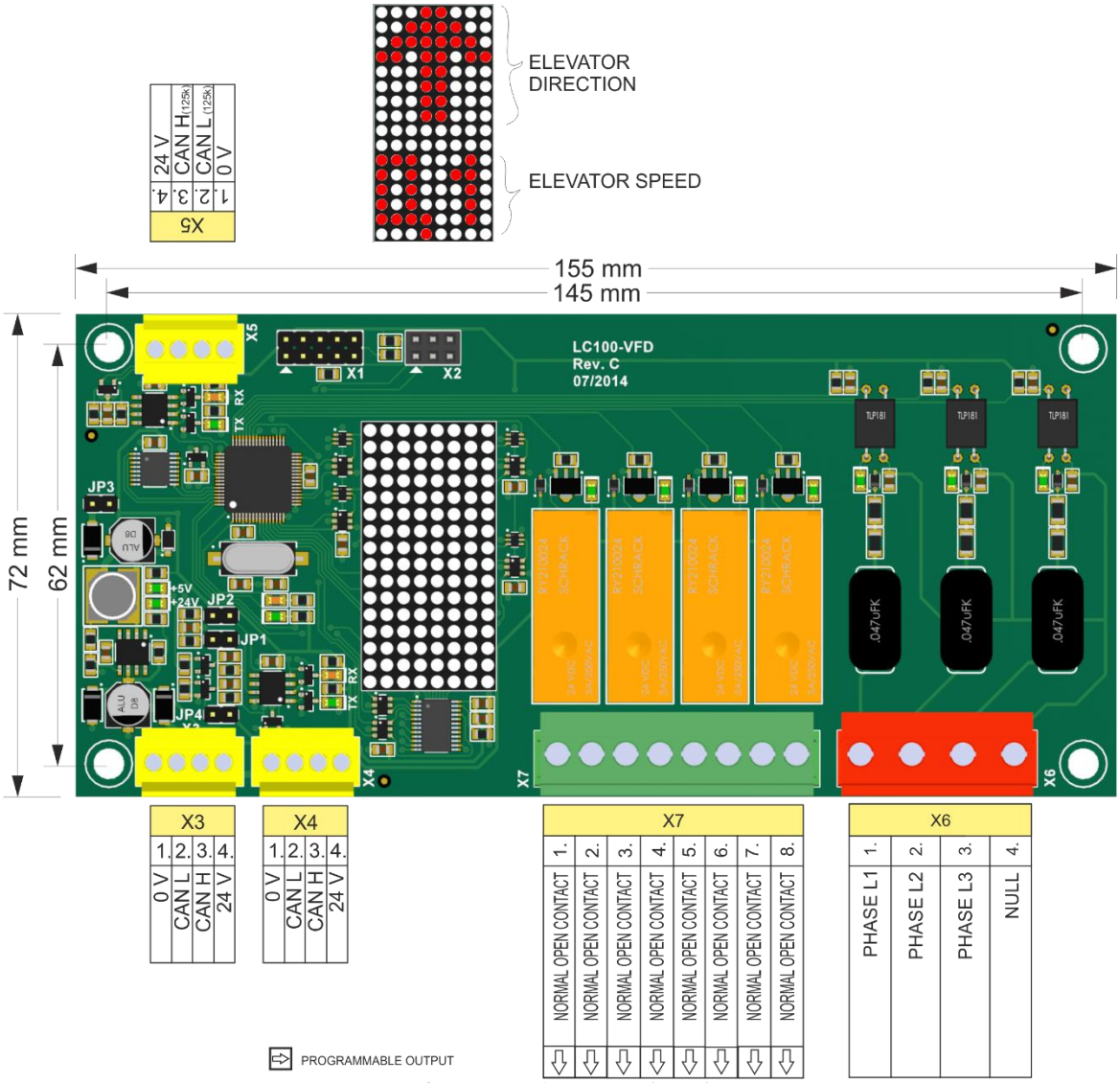
Picture 29 LC100-B board

2.23 LC100-VFD - CAN bridge bord, relay output, phase control bord

LC100-VFD – bord includes CAN bridge (CAN bridge board is used for connecting can devices which are not compatible with the LC100 CAN protocol (frequency inverter, encoders…)), 4 relay outputs, phase control, display which shows the elevators direction and speed.

Phase control is enabled or disabled by the parameter T-19, star below A.

The board is connected to CAN1 bus of the LC100 trough the X3 or X4 connectors.



Picture 30 LC100-VFD board

2.24 LC100-VFX - CAN bridge bord, relay output, phase control, safety circuit board

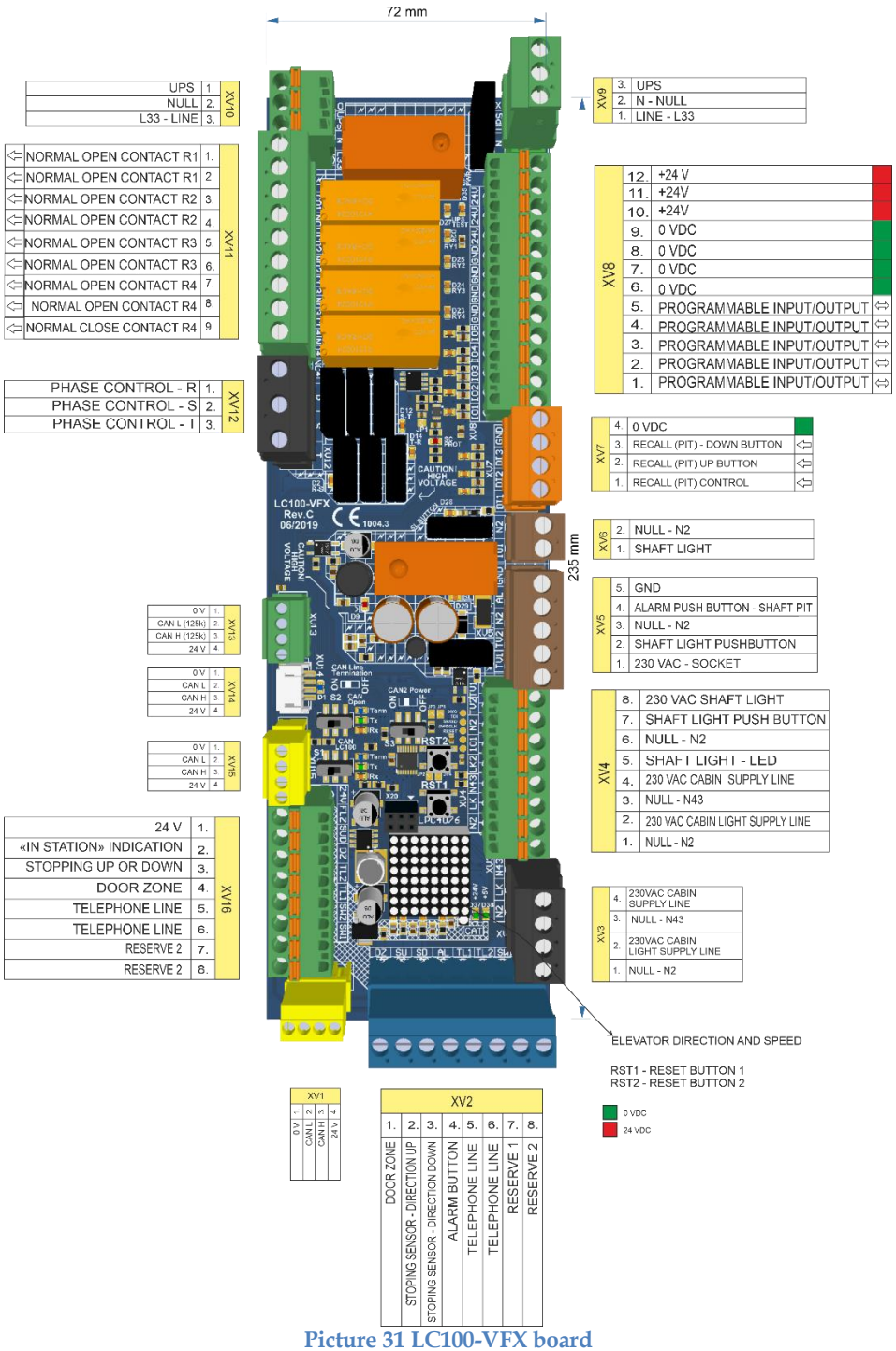
LC100-VFX – board includes a CAN bridge (the CAN bridge board is used for connecting can devices which are incompatible with the LC100 CAN protocol ((frequency inverter, encoders…) on the XV13 connector), 4 relay outputs, phase control, display which indicates the elevators direction and speed.

Phase control is enabled or disabled by the parameter T-19, star below A.

The board is connected to CAN1 bus of the LC100 trough the XV1 or XV15 connectors.

RST1 button – Reset LC100-C/2 (**FI-353**)

RST2 button – Reset shallow pit/2 (**FI-353**)

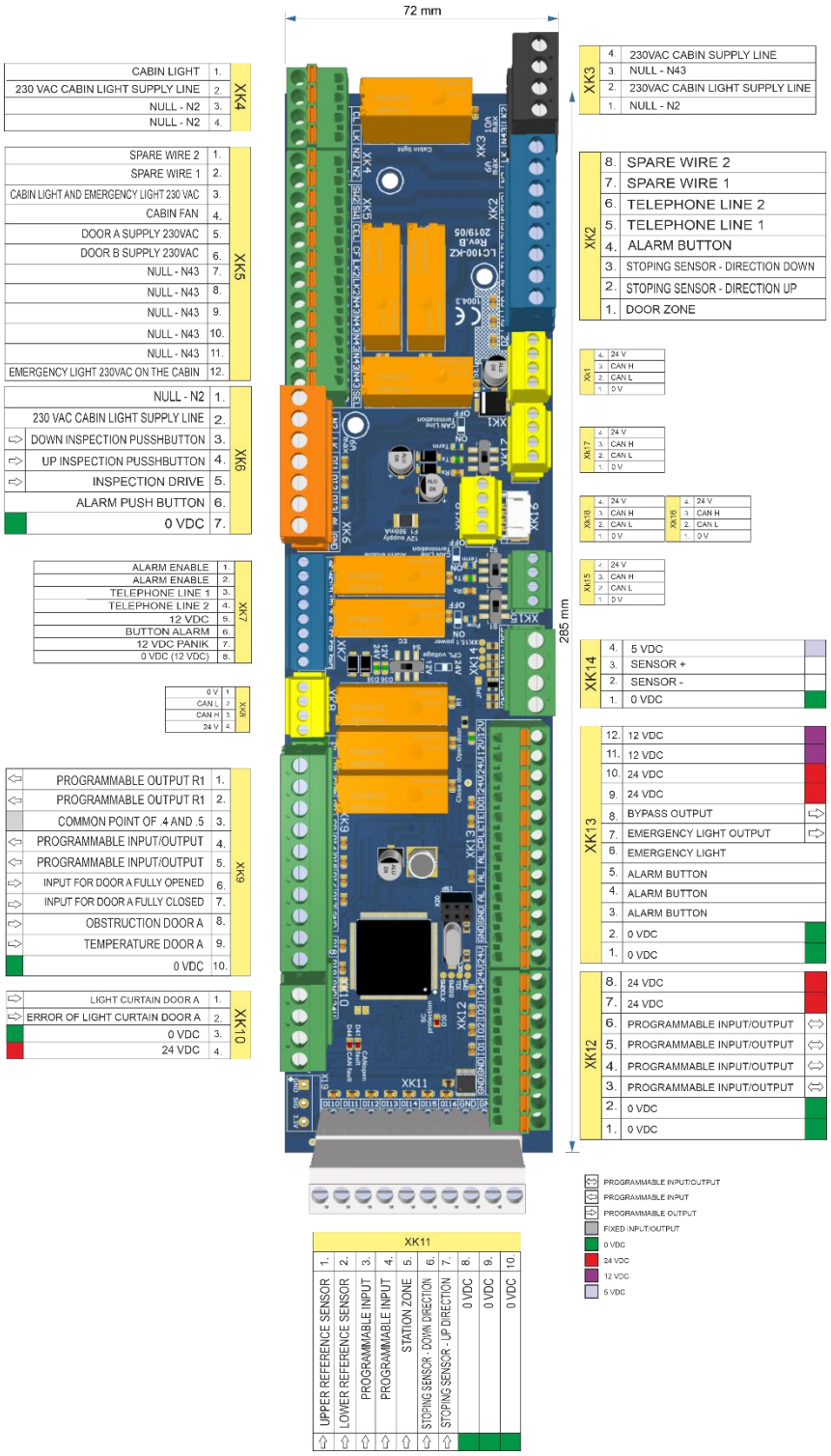


Picture 31 LC100-VFX board

2.25 LC100-KZ - cabin board

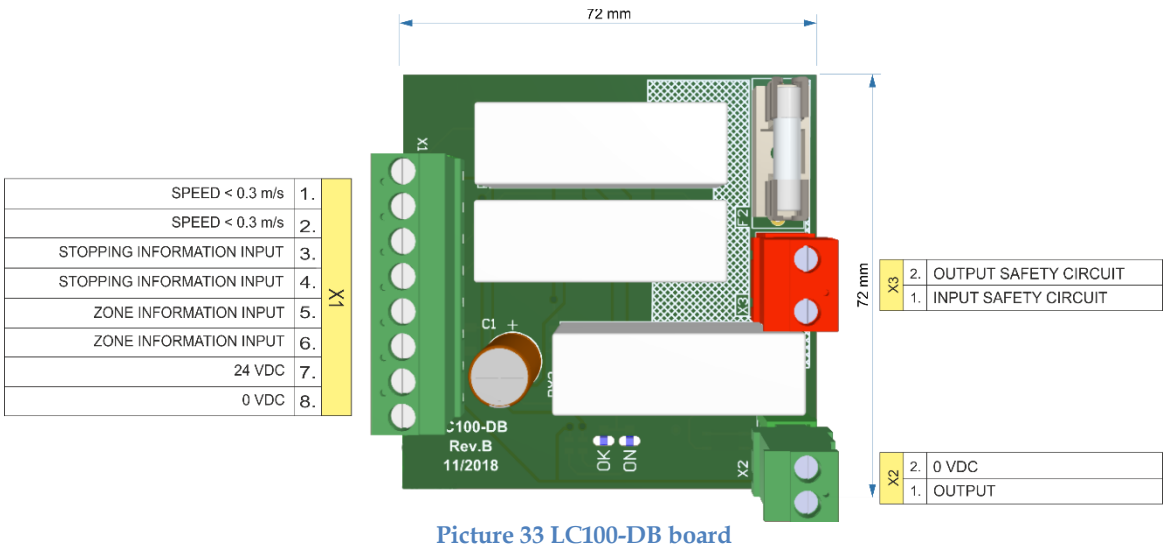
The LC100-KZ – bord includes CAN bridge (CAN bridge board is used for connecting can devices which are not compatible with the LC100 CAN protocol (absolute encoder) via the XK15 connector), pre-connection of the cabin supply voltage (light, doors, alarm…)

The board is connected to CAN1 bus of the LC100 trough the XK1, XK17, XK18 or XV16 connector.



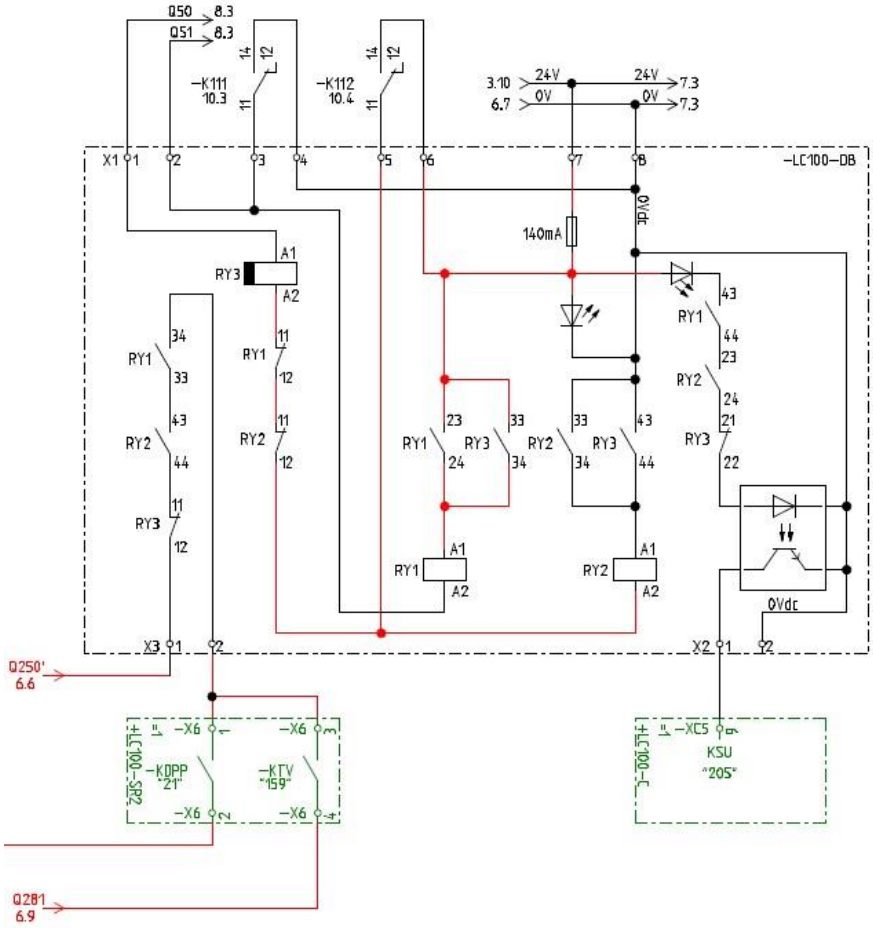
Picture 32 LC100-KZ board

2.26 LC100-DB – safety circuit bridging board



Picture 33 LC100-DB board

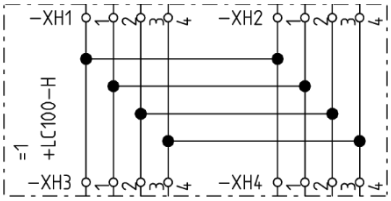
Connection diagram for LC100-DB:

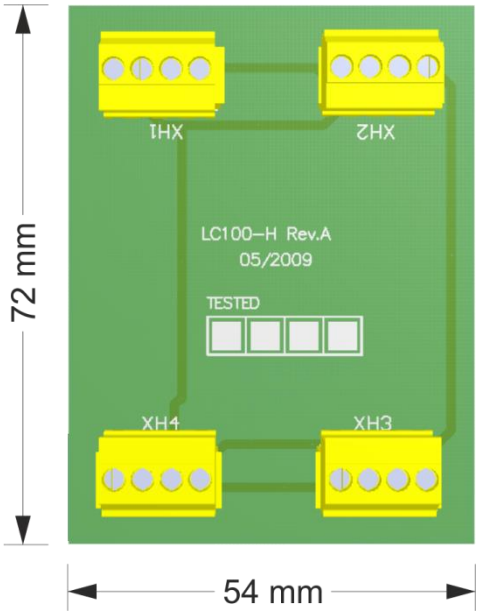


2.27 LC100-H CAN connection board

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

LC100-H board connection:





Picture 31 - LC100-H board

2.28 LC100-GSM emergency voice call

The LC100-GSM board is a GSM modem board used for emergency voice calls and communication with the Lift Remote Monitoring system.

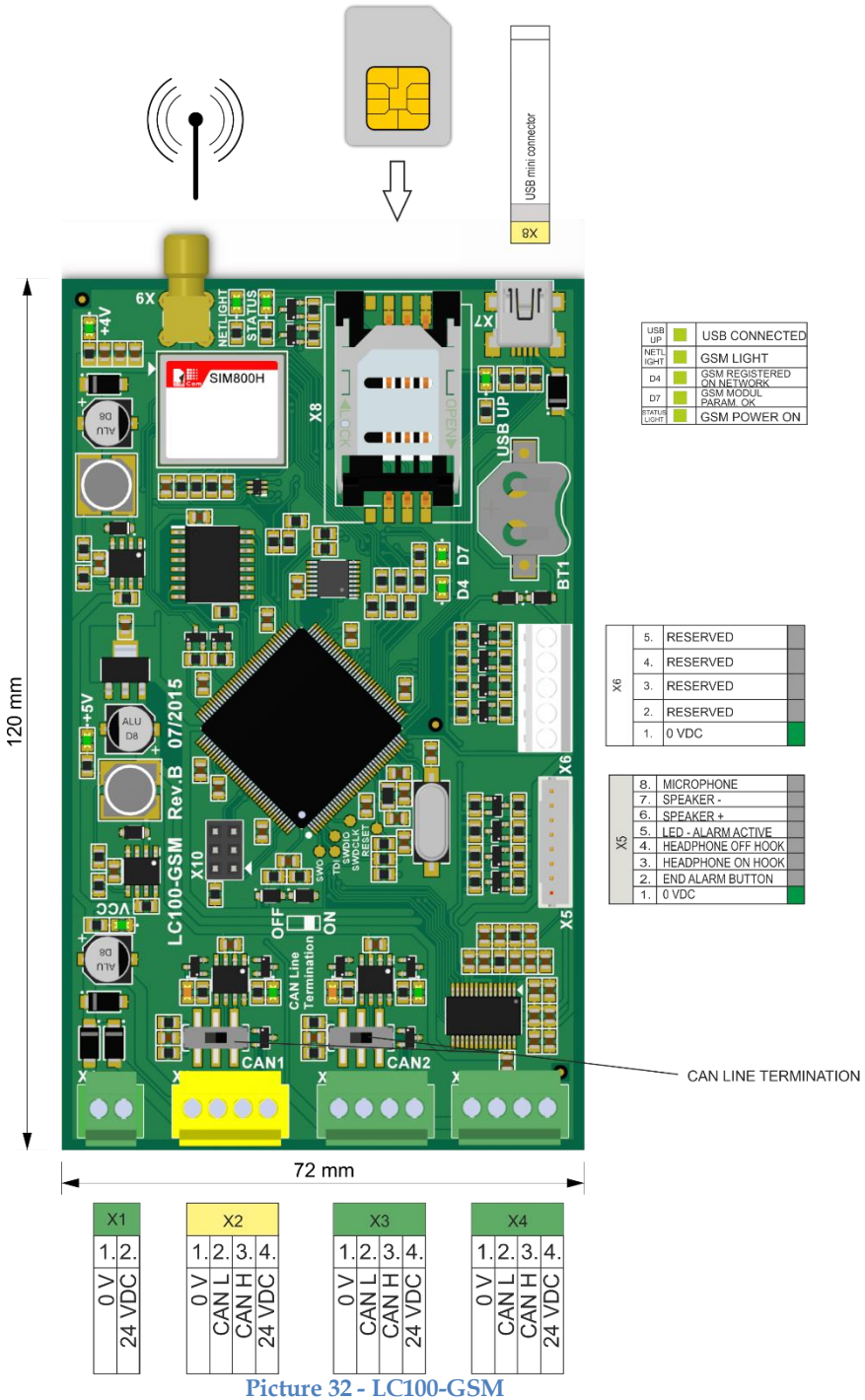
Main functions:

- 2 independent CAN BUS serial communication channels
- Integrated GSM/GPRS modem with SIM card slot
- Speaker and microphone connection
- USB memory stick connection

Programing is possible using;

- DTMF codes
- LC100-D2 terminal

More information in additional document: *„0219-E-ENG-LC100_Emergency_Telephone_Manual.pdf“*



Picture 32 - LC100-GSM

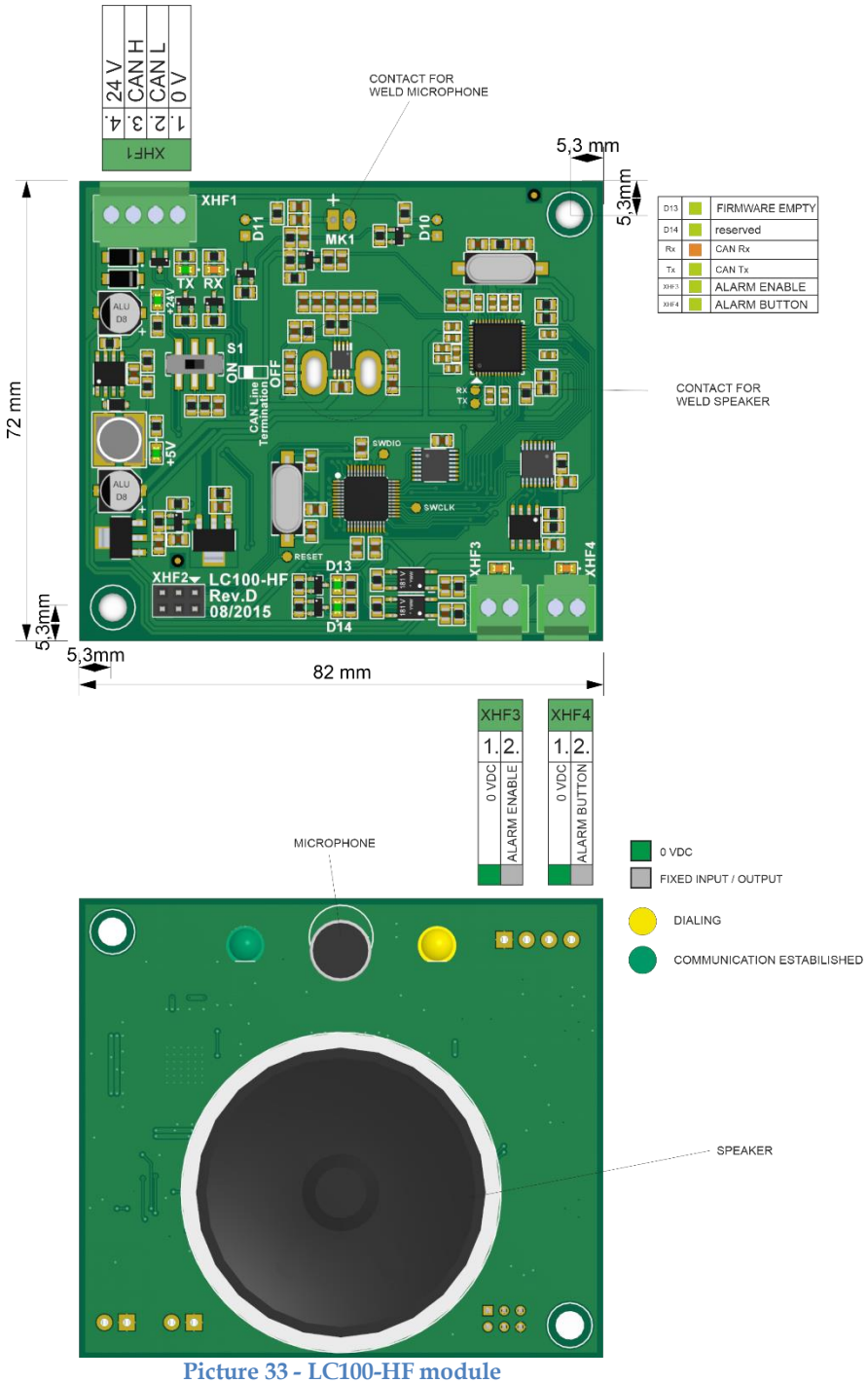
2.29 LC100-HF handsfree voice communication

The LC100-HF board includes handsfree voice communication function (part of the emergency voice communication system).

Main functions:

- CAN bus serial communication
- Alarm enable and alarm pushbutton connection
- Integrated speaker and microphone
- Fully digital voice transfer via CAN BUS (excellent noise immunity and acoustic echo cancellation)
-

More information in additional document: *„0219-E-ENG-LC100_Emergency_Telephone_Manual.pdf“*



Picture 33 - LC100-HF module

3. Managment with LC100-D2 terminal

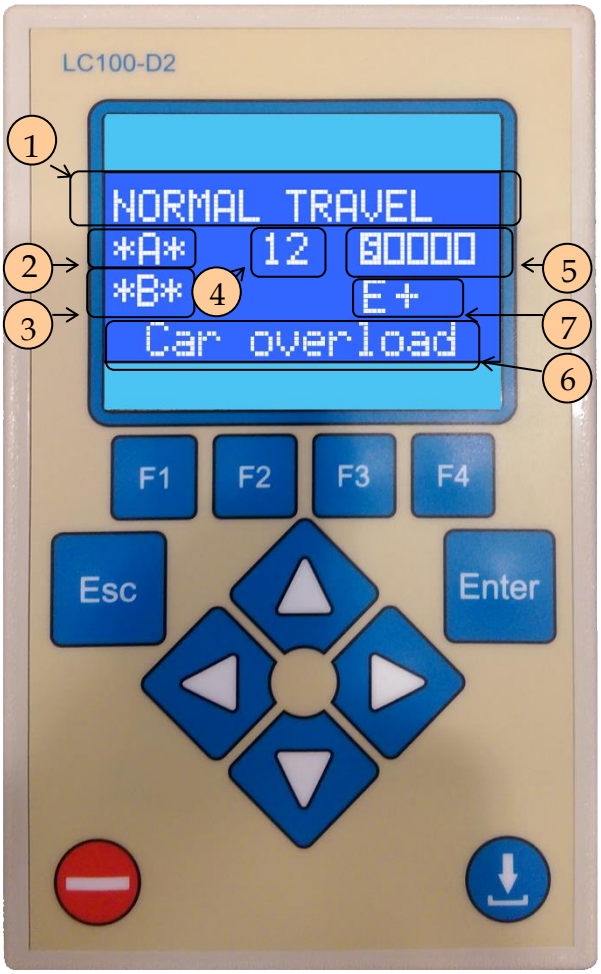
The LC100-D2 terminal is used for supervision, diagnostics and parameter settings of the LC100 system. The supervisory-control terminal consists of a four line LCD screen, a four button navigation keyboard with Enter, Escape keys and a reset button, by pressing the Enter key the user enters the menu and confirms the selected parameters, the Escape key is used to exit the menu, as shown in Figure 3.1. The LC100-D2 terminal can be connected anywhere on the CAN bus communication. After switching to the bus terminal the terminal displays the basic status of the elevator and after pressing the enter key it goes into the main menu.

For accesing the additional menus the F1, F2, F3 and F4 function buttons are used.

3.1 Basic view

The main display on the LC100-D2 terminal contains basic status information of the system. The status display is divided into 7 parts:

1. The basic state status
2. A side door status
3. B side door status



4. Active floor status
5. Safety circuit Status which turns in to drive status.
6. Active failure status
7. Landing calls status:
   E:+ landing calls are allowed
   E:- landing calls are not allowed

3.1.1 Basic elevator state

Basic elevator states are shown on the top line of the primary LC100-D2 terminal.

Elevator state	ID	Description
Service (35) undefined	4	Indicates that the service travel port is not defined FI-235. It is necessary to define the service travel port in the configuration menu.
Service travel	5	Indicates that the service travel is activated. The message is recorded in the statistics without time delay after switching off the service travel FI-235. 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 the recall travel FI-201.
Service & recall	7	Indicates that the service and recall travel are simultaneously activated. Service travel is prioritized and the recall travel is disabled. It is necessary to turn off service travel to regain 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 the evacuation input is active FI-207. The tzpe of evacuation preocedure is defined by the parameter A-04.
Aditional 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.
Service from cabin	13	Indicates that the service travel on the cabin is activated. The message is recorded in the statistics without time delay after switching off service travel FI-235. Cabin calls are canceled. Landing calls are canceled in simplex mode.
Service from pit	14	Indicates that the service travel from the pit is activated. The message is recorded in the statistics without time delay after switching off service travel FI-235. Cabin calls are canceled. Landing calls are canceled in simplex mode.
Continue→RESET	28	Indicates that to resume normal travel it is necessary to press the reset button on LC100-D terminal or activing FI-214.

3.1.2 Elevator door state

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

Door state	Description
A	Door A stopped
>A<	Closing door A
[A]	Closed door A
<A>	Opening door A
]A[	Open door A
!A!	Erorr door A
□A□	Indicates that the door A is in open position

3.1.3 Current elevator station display

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

0– Indicates that the learning travel has not been completed.

1–40– Indicates the current stations during normal travel.

3.1.4 Safety line and drive display

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

● - Indicates acive state

○ - Indicates inactive state

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

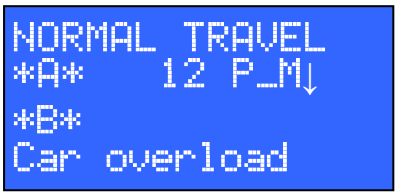
The second field indicates the presence of the safety circuit voltage at the terminal XS9:2 (Landing door contacts)

The third field indicates the presence of the safety circuit voltage at the terminal XS10:2 (Car door A contacts)

The Fourth field indicates the presence of the safety circuit voltage at the terminal XS10:4 (Car door B contacts)

The fifth field indicates the presence of sefety circuit voltage at the terminal XS11:2 (Landing door lock contacts)

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



P_ - Indicates active drive, and the next two characters indicate the driving speed and direction.

M – Leveling speed

1 – Nominal speed

2 – Second operating speed

3 – Third operating 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 the elevator is in any way not in an operational state, the bottom line of primary screen will display descriptions of the current error, or failure state. All messages that are included in the statistics are displayed in such way that the bottom line of the primary screen cycles on and off every second. When there are two or more error states, the bottom line of the primary screen will alternately display messages describing the current state of the 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 inp	15	Indicates that the input buttons for service travel up FI-236 and service travel down FI-237 are simultaneously active.
Undefined RU-50	16	Indicates that the upper reference switch input is not defined in the system configuration FI-250, for the rated speed. Service travel is then disabled.
Undefined RD-52	17	Indicates that the lower reference switch input is not defined in the system configuration FI-252, for rated speed. Service travel is then disabled.
Uper position - 52	18	Indicates that the upper reference switch is active FI-250
Down position - 52	19	Indicates that the lower reference switch is active FI-252
Low safety space	20	Indicates that the low safety space input is active FI-206. Normal travel possible only after reset over the LC100-D terminal or by activating FI-327.
NGV A3 no RDY	21	Indicates that after the drive command is given to the NGV hydraulic agregat, there is no „ready“ input FI-288 active, starting is not posible.
ANTS not init	22	Indicates that the initial position of the absolute positioning encoder is not defined.
ANTS not conn.	23	Indicates that the absolute positioning encoder is not connected.
Low safety sp. 1	24	Indicates that the low safety space input is active FI-308. Normal travel possible only after activating FI-327.

Table of load meter and special program state:

Screen message	ID	Description
Pillar in shaft	25	Idicates that the pillar in the shaft is in vertical position FI-309.
Activ ALARM	26	Indicates that the alarm button is active FI-335.
Set password	27	Indicates that you need to login in the system by password.
Continue-->Reset	28	Indicates that an error occurred, and to resume normal travel the red reset button on the LC-100D must be pressed.
Priority travel	30	Indicates that the priority travel is active. Priority travel can be activated over input FI-243 (key in the cabin) or over the monitoring system. The message is recorded in the statistisc without time delay. By activating the 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 (the fireman program is activated using the same input as the priority travel, at the time when the fire program is activated and the elevator stops at the evacuation floor)
Fire program 1	32	Indicates that the fire program is active.The fire program is activated using adjustable input function FI-210 or over the monitoring system. Also the evacuation floor parameter must be defined (B-07). After activation the elevator stops at the evacuation floor and holds with open doors.
Fire program 2	33	Indicates that the fire program is active. Fire program is activated using adjustable input function FI-211 or over the monitoring system. Also the evacuation floor parameter must be defined (B-08). After activation the elevator stops at the evacuation floor and holds with open doors.

Fire program 3	34	Indicates that the fire program is active. Fire program is activated using adjustable input function FI-212 or over the monitoring system. Also the evacuation floor parameter must be defined (B-09). After activation the elevator stops at the evacuation floor and holds with open doors.
Fire program 4	35	Indicates that the fire program is active. Fire program is activated using adjustable input function FI-213 or over the monitoring system. Also the evacuation floor parametar must be defined (B-10). After activation the elevator stops at the evacuation floor and holds with open doors.
Car full	36	Indicates that the 80% load input is activated (input with parameter FI-241) for more than 10 sec. Elevator disables landing calls.
Car overload	37	Indicates that the 100% load input in activated (input with parametar FI-242) for more than 10 sec. Elevator holds at the station with open doors.
Zone measurement	180	
End zone measur.	181	

Safety circuit state messages:

Screen message	ID	Description
STOP switch OFF	38	Indicates that the safey 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 the safety circuit is interrupted at the landing door contact. No power on connector XS9:2
CD-A switch OFF	40	Indicates that the safety circuit is interrupted at the car door A contact. No power on connector XS10:2
CD-B switch OFF	41	Indicates that the safety circuit is interrupted at the car door B contact. No power on connector XS10:4
LOCK switch OFF	42	Indicates that the 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 power on the connector XS11:2 and there is no door lock command.
UPER LIMIT OFF	44	Indicates that the upper end switch is actve, switch is controled by input function FI-229. 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 up direction contactor deactivation fault. The contactor is controled by the FI-220 input function.The contactor must be off within 2 seconds after the system turns off the output function FO-001.
Con.DOWN not OFF	46	Indicates a down direction down contactor deactivation fault.The contactor is controled by the FI-221 input function. Contactor must be off within 2 seconds after the system turns off the output function FO-002.
Con.HS not OFF	47	Indicates a high speed contactor deactivation fault.The contactor is controled by the FI-223 input function.The contactor must be off within 2 seconds after the system turns off the output function FO-004.
Con.LS not OFF	48	Indicates a low speed contactor deactivation fault.The contactor is controled by the FI-222 input function.The contactor must be off within 2 seconds after the system turns off the output function FO-003.
Con. MOT not OFF	49	Indicates the motor contactor deactivation fault, used with frequency regulated elevators.The contactors are controled by the FI-225 input function.
Con. Y not OFF	50	Indicates a „star“ contactor deactivation fault, used with hydraulic elevators. The contactor is controled by the FI-227 input function.The contactor must be off within 2 seconds after the system turns off the output function FO-013.
Con. D not OFF	51	Indicates a „delta“ contactor deactivation fault, used with hydraulic elevators. The Contactor is controled by the FI-228 input function.

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.The contactor is controled by the FI-220 input function.The contactor must be turned on within 2 seconds after system turns on the output function FO-001.
Con.DOWN not ON	53	Indicates a direction down contactor activation fault.The contactor is controled by the FI-221 input function.The contactor must be turned on within 2 seconds after the system turns on the output function FO-002.
Con.HS not ON	54	Indicates a high speed contactor activation fault.The contactor is controled by the FI-223 input function.The contactor must be turned on within 2 seconds after the system turns on the output function FO-004.
Con.LS not ON	55	Indicates a low speed contactor activation fault.The contactor is controled by the FI-222 input function.The contactor must be turned on within 2 seconds after system turns on the output function FO-003.
Con.MOT not ON	56	Indicates a motor contactors activation fault, used with frequency regulated elevators.The contactors are controled by the FI-225 input function.
Brake not ON	57	Indicates a failure to activate the elevators electromechanical brake. Brake control is performed over the brake contacts at the FI-224 input.The signal must be present while traveling, and at max 2 seconds after the up or down direction contactors are activated.
Inverter not OK	58	Indicates a frequency regulator fault. Controled by the FI-226 input function. The regulators control signal must be present at all times.
Con. Y not ON	59	Indicates a „star“ contactor activation fault, used with hydraulic elevators. The contactor is controled by the FI-227 input function.The contactor must be turned on within 2 seconds after the sytem turns on the output function FO-013.
Con. D not ON	60	Indicates a „delta“ contactor activation fault used with hydraulic elevators. The contactor is controled by the FI-228 input function.
Con FAN not ON	61	Indicates a motor fan contactor fault.The contactor is controled by the FI-209 input function.The contactor must be turned on after the system turns on the output function FO-018.
Supply not OK	62	Indicates a phase presence and sequence control relay fault.The relay is controled by the FI-204 function input.

Table with warnings and other failures:

Screen message	ID	Description
Error I-valve	29	Indicates a output error on the Bucher I-Valve, controlled by the FI-313 input function.
PTC active	63	Indicates that the resistance of the PTC sensor exceedes the limit set by the I-02 parameter (hot state PTC resistance).The error remains active for another five minutes after the signal, or once the probe resistnace drops below the value set by the I-01 parameter (cold state PTC resistance).The current PTC resistance can be monitored in the inputs/outputs menu.
Start failure	64	Indicates that the elevator after establishing the control signals from the control group has not initiated the start procedure, in the time set by the parameter I-03. As start control, the group takes into account all the signals except for the pulses for copying used in copying types 4 and 5, parameter E-01. Parameter should be set to a sufficient value needed for the elevator to travel between 2 copiyng signals, when traveling at low speed the value os increased by approximately 20%. After activating the error state, it is necessary to reset the control by disconnecting the power supply or using the reset button on the LC100-D terminal. Inspection travel is still possible during a active error state.
Movement failure	65	Indicates that the elevator after initiating the start from the station has not moved for logner that the time set by the parameter I-03. This message is identical to the Start failure error, with the difference that after the start at least one copying signal has changed, It is necessary to reset the control by disconnecting the power supply or using the reset button on the LC100-D terminal.

Screen message	ID	Description
Slow speed fail.	66	Indicates that the elevator is traveling at slow speed for longer than the time set by the parameter I-04, and that in the meantime the stopping switch signal was not activated. Since the above error may occur as a result of a copying error (stopping switch) the elevator must do a “first travel” procedure again, It is necessary to reset the control by disconnecting the power supply or using the reset button on the LC100-D terminal.
Leveling failure	67	Indicates that the elevator is traveling at releveling speed for longer than the time set by the parameter I-05, and that in the meantime the stopping switch signal was not activated, it is necessary to reset the control by disconnecting the power supply or using the reset button on the LC100-D terminal.
Box overtemper.	68	Indicates that the temperature measured by the processor on the LC100-C board has risen above the value set by the parameter I-12.
Con. BRK not OFF	69	Indicates the elevator brake deactivation error. Brake control is achieved over a mechanical contact on input FI-224.
Max drive/hour	174	Indicates that the elevator has reached the maximum number of drives per hour as defined by the parameter H-24.
Enable ADL open	185	Indicates that the enable bit (Word bit 15 - Digital input E mon) is not present or interrupted in the elevator moving. When the bit is present for the first time, it must be present throughout the whole travel, otherwise, an error occurs. (T-19 = C)
Fast stop aktiv	186	Indicates that the enable bit (XC7.1) is not present or interrupted during the elevators movement. When the bit is present for the first time, it must be present throughout the whole travel, otherwise, an error occurs. (T-19 = D) **signal filter 50ms*

Elevator door error messages:

Screen messages	ID	Description
Door A open err	70	Indicates a door side A opening failure: - If there is a end-switch – Elevator door A has not activated the end-switch during opening, at input FI-260, in time set by parameter D-13. - If there are is no end-switch – after the opening sequence, the system continues to recieve information from the safety circuit that the door is closed.
Door B open err	71	Indicates a door B opening failure: - If there is a end-switch – Elevator door B has not activated the end-switch during opening,at input FI-270, in time set by parameter D-21. - If there are is no end-switch – after the opening sequence, the system continues to recieve information from the safety circuit that the door is closed.
Door A close err	72	Indicates a door side A closing failure: - If there is a end-switch – Elevator door A has not activated the end-switch during closing, at input FI-261. - If there are is no end-switch – after the closing sequence, the system continues to recieve information from the safety circuit that the door is open.
Door B close err	73	Indicates a door side A closing failure: - If there is a end-switch – Elevator door A has not activated the end-switch during closing, at input FI-271. - If there is no end-switch – after the closing sequence, the system continues to recieve information from the safety circuit that the door is open.
Landing door err	74	Indicates a landing door contact failure, after receiving the door close inputs FI-261 or FI-271 and does not recieve the landing door signal within 3 seconds.
Car door A err	75	Indicates a cabin door A contact failure, After closing the cabin door A, the system has received a signal on the end-switch FI-261, and did not receive the cabin door A closed signal from the safety circuit, within 3 seconds.

Car door B err	76	Indicates a cabin door B contact failure, After closing the cabin door A, the system has received a signal on the end-switch FI-271, and did not receive the cabin door B closed signal from the safety circuit, within 3 seconds.
Door locking err	77	Indicates a landing door locking failure, that occurs: - On doors with mechanical locking 3 seconds after closing the door. - On doors with electrical locking 3 seconds after the door locking output signal FO-48 was activated.

Screen messages	ID	Description
Obstacle door A	78	Indicates an obstacle signal longer than 30s while closing the door A at input FI-262. The message is information about the input state, the elevator is holding the door open until the signal is deactivated. This function is inactive during inspection travel.
Obstacle door B	79	Indicates an obstacle signal longer than 30s while closing door B at input FI-272. The message is information about the input state, the elevator is holding the door open until the signal is deactivated. The function is deactivated during inspection travel.
Photocell door A	80	Indicates the photocell signal active on side A, FI-263. If the fireman program is active the photocell input is ineffective. The message is information about the input state at FI-263, the elevator is holding the door open until the signal is deactivated.
Photocell door B	81	Indicates a photocell signal active on side B, FI-273. If the fireman program is active the photocell input is ineffective. The messege is information about the input state at FI-273, the elevator is holding the door open until the signal is deactivated.
Door A open but.	82	Indicates the open door A button signal active FI-264.
Door B open but.	83	Indicates the open door B button signal active FI-274.
Door A close but.	84	Indicates the close door A button signal active FI-265 for longer than 30 seconds. The message is information for the user, control sets standard exit time at stop D-30=0.0 seconds.
Door B close but.	85	Indicates the close door B button signal active FI-275 for longer than 30 seconds. The message is information for the user, control sets standard exit time at stop D-30=0.0 seconds.
Door lim sw A-er	86	The message indicates that the door A open limit-switch and closed limit-switch are both active (active inputs FI-260 and FI-261) at the same time. Door A stops and the elevator is blocked until the logic input state is re-established (door can be on one limit-switch only).The functions are inactive during inspection travel.
Door lim sw B-er	87	The message indicates that the door B open limit-switch and closed limit-switch are both active (active inputs FI-270 and FI-271) at the same time. Door B stops and the elevator is blocked until the logic input state is re-established (door can be on one limit-switch only). The functions are inactive during inspection travel.
Door in car	89	Indicates that the input “door in car” is active. Function FI-246.
Photo in drive	90	Indicates that the photocell signal for side A or B, respectively FI-263 or FI-273, is interrupted during travel, in case of no car doors. Cabin calls can start the elevator. After activating the alarm state, the elevator can't be started over landing calls before reseting.

Elevator positioning error messages:

Screen messages	ID	Description
Down/Ref sen.err	91	The elevator has stopped at a station, the 1st station was copied, but the lower reference switch was not activated at input FI-252. The elevator repeats the learning travel procedure. The error is effective for copying type E-01=2. Possible errors: - Too many stations were copied so the elevator stopped in the station (other than 1st) without a reference switch active. - Elevator is in the 1st station but there is no reference switch active. - Elevator is not in the 1st station, but the reference switch signal has temporarily activated but then was lost again.
Up /Ref sen.err	92	The elevator has stopped at a station,the last station was copied, but the upper reference switch was not activated FI-250.The elevator repeats the learning travel procedure. The error is effective for copying type E-01=2 Possible errors: - Too many stations were copied so the elevator stopped in the station (other than last) without a reference switch active. - Elevator is in the last station but there is no reference switch active. - Elevator is not in the last station, but the reference signal has temporarily activated but then was lost again.
Ref.1 sensor err	93	Both upper and lower reference switch are active at the same time at inputs FI-250 and FI-252. Switch activity is controled by the elevator in the station. After establishing the correct logical input state, the elevator begins the learning travel procedure. The message does not show during the inspection travel and learning travel, if elevator does not start from the station.
Ref.2 sensor err	94	Both upper and lower reference switch for medium speed are active at the same time, at inputs FI-251 and FI-253, for the copying type E-01=5. Switch activity is controled by the elevator in the station. After establishing the correct logical input state, the elevator begins the learning travel procedure. The message does not show during the inspection travel and learning travel, if elevator does not start from the station.
Down sensors err	95	Indicates a downwards counting sensor error, FI-255 for the copying types E-01=2 or 3. As the elevator arrives at the lower reference switch, input FI-252, the system controls the downwards count.The error is shown if the counting state differs by 2 or more as it comes to the reference switch. The elevator is not blocked but continues to travel. It is necessary to check the counting signals and the lower reference switch. Possible errors: - There are more stations than defined by the parameter A-01. - Incorrect downwards counting signal.
Up sensors err	96	Indicates a upwards counting error, FI-254 for the copying types E-01=2 or 3. As the elevator arrives at the upper reference switch, input FI-250, the system controls the upwards count. The error is shown if the counting state differs by 2 or more as it comes to the reference switch. The elevator is not blocked but continues to travel. It is necessary to check the counting signals and the upper reference switch. Possible errors: - There are more stations than defined by the parameter A-01. - Incorrect upwards counting signal.
Up stop sen.er	97	Indicates a stopping upwards switch deactivation failure, input FI-256. Entering the deceleration zone, the system controls the signal activity (must be inactive). Otherwise, the elevator can not perform the alignment and the preopening until signal deactivation.
Down stop sen.er	98	Indicates a stopping downwards switch deactivation failure, input FI-257. Entering the deceleration zone, the system controls the signal activity (must be inactive). Otherwise, the elevator can not perform the alignment and the preopening until signal deactivation.
Impulse sens err	99	Indicates a copying impulse failure. During travel betwen two stops, there was no change registered on the counting input or inductive switch input.

Screen messasges	ID	Description
Too many floors	100	The message can be displayed if the coping type E01=4 or 5 is selected. First travel (learning travel) is done through the entire shaft, from the top to the bottom station. Stopping in station, FI-256, FI-257 and impulse switch XC7:1 are controlled during learning travel. The system counts the stations, there must be be at least 10 impulses between the stations. If the system didn't count the stations correctly, the first travel procedure is repeated. Possible errors: - Elevator passes through the end stations. - There are too many stations in relation to parameter *A-01*.
Too few floors	101	The message can be displayed if coping type E01=4 or 5 is selected. First travel (learning travel) is done through the entire shaft from top to bottom station. Stopping in station, FI-256, FI-257 and impulse switch XC7:1 are controlled during learning travel. The system counts the stations, there must be at least 10 impulses between the stations. If the system didn't count the stations correctly,the first travel procedure is repeated. Possible errors: - No impulse change at all or between two stations so the system didn't count the number of stations correctly in relation to the parameter A-01. - Not enough station signals in relation to the parameter *A-01*.
Error EN81 (A3)	102	Indicates a fault on the UCM safety device. Device is controlled trough the FI-300 input. Fault can't be reset with reseting the power. Fault must be reset with the reset button on the LC100-D keypad. If the service drive is switched on than the controller will give a reset command on the first inspection drive command if reseting is possible.
Gov.not on (A3)	103	Indicates that when attempting to drive the overspeed governor coil was not powered on. Control of the overspeed governor coil is done trough the input function FI-290. Fault must be reset trough the reset button on the LC100-D keypad.
Gov.not off (A3)	104	Indicates that when stopping the elevator, the overspeed governor coil was not powered off. Control of the overspeed governor coil is done trough the input function FI-290. Fault must be reset trough the reset button on the LC100-D keypad.
Test EN81 (A3)	105	Indicates that the UCM test is active. Test is started trough the LC100/test menu.
Err.V.down (A3)	106	Indicates that the A3 down valve is not opening, input FI-310.
Error UPS	107	Indicates that UPS test was not successful, inputs FI-342 or FI-311 are not present.
Phase failure	108	Indicates missing one or more of the power lines phase checks by the VFD card at inputs FI-297, FI-298, FI-299.
Evacuat.failure	109	Indicates that the automatic evacuation lasts longer than the time set by the parameter I-06. The system should be reset.
Safety device er	110	Indicates a safety device for preopening and leveling error. The system should be reset.
Car light error	111	Indicates a car light error. Car lights are controlled over input FI-245.
Program ENTERING	112	Indicates that the building loading program is active.
Program EXIT	113	Indicates that the building unloading program is active.
Phase seq.fail	114	Indicates that the phase sequence is not correct, checked by the VFD card.
Real time err.	115	Indicates that setting the time is needed. Time can be set trough Time menu. If the time is not remembered while switching off the controller, check the battery.
Bridge saf.cir.	128	Indicates that the safety circuit is bridged.
Err light curt A	129	Indicates that light curtain didn't work correctly detected by FI-336 or D-37 or D-39 parameter.
Err light curt B	130	Indicates that light curtain didn't work correctly detected by FI-337 or D-38 or D-39 parameter.
Temperature do.A	131	Indicates that the door, side A, inverter is overheated, input function FI-338.
Temperature do.B	132	Indicates that the door, side B, inverter is overheated, input function FI-339.

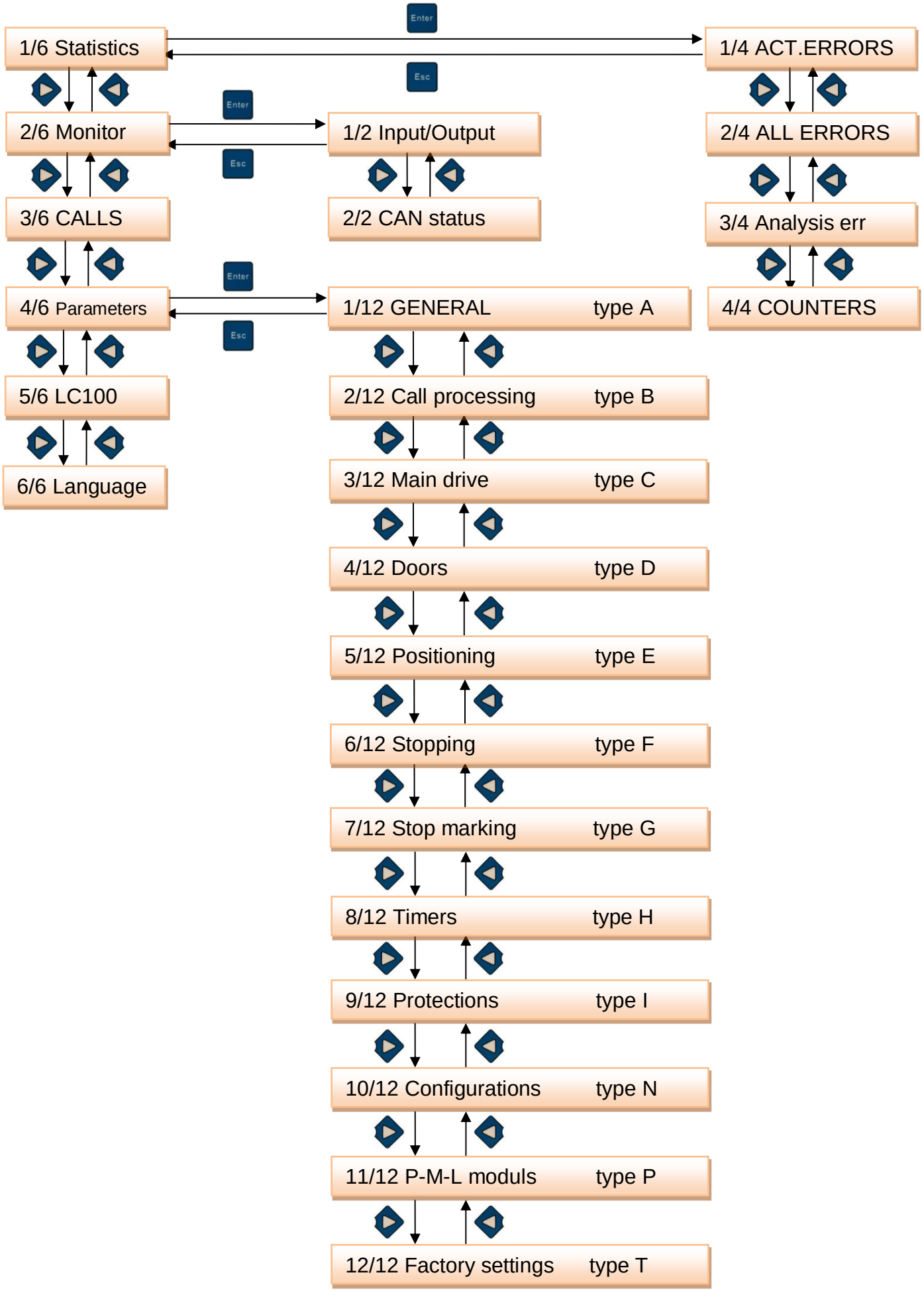
FOTO-A disable	133	Indicates that the light curtain side A is defective and door closing works only with nudging.
FOTO-B disable	134	Indicates that light curtain B are defective and door closing works only with nudging.
Service door op.	135	Indicates that the service door is opened FI-343.
Err safety gear.	136	Indicates that the safety gear switch is active FI-344.
STOP in control	137	Indicates that the STOP switch is active in the controll cabinet FI-345.
STOP on cabine	138	Indicates that the STOP switch is active on the car. FI-346.
STOP by machine	139	Indicates that the STOP switch by the main drive is active FI-347.
STOP in the pit	140	Indicates that the STOP switch in the pit is active FI-348.
Undefined error	141	--
Err.saf.co.Cab-A	142	Indicates a cabin door A contact failure.
Err.saf.co.Cab-B	143	Indicates a cabin door B contact failure.
Err.saf.lock A	144	Indicates a locking device door A contact failure.
Err.saf.lock B	145	Indicates a locking device door B contact failure.
Con.gov.not on	155	Indicates that when attempting to drive, the overspeed governor contactor was not powered on. Control of the overspeed governor contactor is done trough the input function FI-291. The fault must be reset trough the reset button on the LC100-D2 keypad.
Con.gov.not off	156	Indicates that when stopping the elevator, the overspeed governor contactor was not powered off. Control of the overspeed governor contactor is done trough the input function FI-291. The fault must be reset trough the reset button on the LC100-D2 keypad.
ZONA sensor err.	157	Indicates a stopping zone switch deactivation failure, control of the stopping zone is done trough the input function FI-258.
Sen.ZONA not on	158	Indicates a stopping zone switch activation failure, control of the stopping zone is done trough the input function FI-258.
K-EUCM not off	159	Indicates that when stopping, the K-EUCM contactor was not powered off. Control of the K-EUCM contactor is done trough the input function FI-355. The fault must be reset trough the reset button on the LC100-D2 keypad.
K-EUCM not on	160	Indicates that when attempting to drive, the NC80 it didn't give any output to the contactor K-EUCM. Control of the K-EUCM contactor is done trough the input function FI-355. The fault must be reset trough the reset button on the LC100-D2 keypad.
Error on ANTS	161	Indicates that an error occurred during the position impulses counting.
Check F par	162	Indicates that the F parameters are incorrectly configured when the positioning system E-1=6 is set.
Valve block err.	163	Indicates that the hydraulic block valves are in error FI-356.
PSU Setup	164	Indicates that the setup of the PSU device is needed (absolute position safety device).
PSU Set stops	165	Indicates that the setup of floor levels are needed (absolute position safety device).
PSU Lock	166	Indicates that the PSU device is locked. Unlocking procedure is needed.
PSU Overspeed	167	Indicates that the PSU has detected overspeed movement.
Min preasure err	168	Indicates that pressure is not 0 psi and the cabin is set on wedges, control function FI-359.
PAWL close error	169	Indicates that the PAWLs are not closed, control function FI-357.
PAWL open error	170	Indicates that the PAWLs are not opened, control function FI-358.
PAWL not close	171	Indicates information that the PAWLs are not closed.
Utility error	175	Indicates information about errors on peripheral boards.
Debug message 1	176	Indicates information about interrupting input FI-363 (testing function).
Debug message 2	177	
Err.open actuat	178	Indicates that the actuator is not opened, control function FI-309.
Err.pretr.normal	179	Indicates that the actuator is not closed, control function FI-362.
Zone measurment	180	
End zone measur.	181	
Error on PSU-02	182	Indicates that a error is present on the PSU-02 unit.
Enable ADL open	185	

Fast Stop aktiv	186	

Communication error messages:

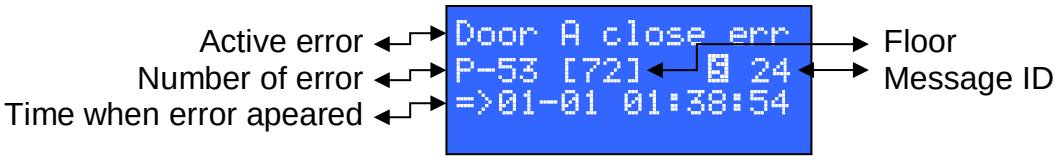
Screen messages	ID	Description
Comm err w -I	116	Communication error between LC100-C and the LC100-I board.
Comm err w -K/K2	117	Communication error between LC100-C and the LC100-K board.
Comm err w -E(0)	118	Communication error between LC100-C and the LC100-E board with address 0.
Comm err w -E(1)	119	Communication error between LC100-C and the LC100-E board with address 1.
Comm err w -C(A)	120	Communication error between LC100-C and the LC100-C board of elevator „A“ in duplex mode.
Comm err w -C(B)	121	Communication error between LC100-C and the LC100-C board of elevator „B“ in duplex mode.
Comm err w -C(C)	122	Communication error between LC100-C and the LC100-C board of elevator „C“ in duplex mode.
Comm err w -C(D)	123	Communication error between LC100-C and the LC100-C board of elevator „D“ in duplex mode.
WDT RESET	124	Indicates a reset of the processor in the event of a unforeseen flow of the program code.
Comm err w -E(2)	146	Communication error between LC100-C and the LC100-E board with address 2.
Comm err w -E(3)	147	Communication error between LC100-C and the LC100-E board with address 3.
Comm err w -E(4)	148	Communication error between LC100-C and the LC100-E board with address 4.
Comm err w -E(5)	149	Communication error between LC100-C and the LC100-E board with address 5.
Comm err w -E(6)	150	Communication error between LC100-C and the LC100-E board with address 6.
Comm err w -E(7)	151	Communication error between LC100-C and the LC100-E board with address 7.
Comm err w -VFD	152	Communication error between LC100-C and the LC100-VFD board.
Comm err w -VFX	153	Communication error between LC100-C and the LC100-VFX board.
Comm err w -SR2	154	Communication error between LC100-C and the LC100-SR2 board.
Error on ANTS	161	Communication error between LC100-C and the LC100-B2/ANTS board.
Comm err w VF7-A	172	Communication error between LC100-C and the door VF7 – A.
Comm err w VF7-B	173	Communication error between LC100-C and the door VF7 – B.
Comm err w -ADL	183	Communication error between LC100-C and the LC100-B2/ADL inverter.
Comm err w -V3	184	Communication error between LC100-C and the LC100-V3 card.

3.2 Menu structure



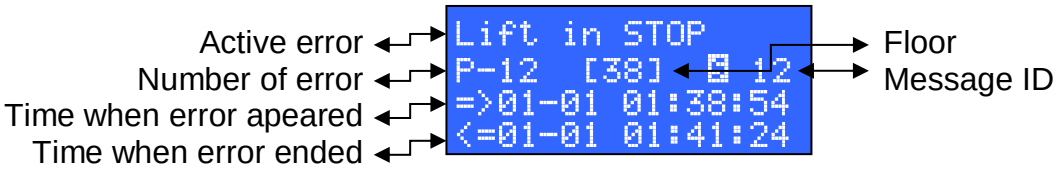
3.2.1 Statistics

1/6 Statistics	1/4 Active errors



The Active errors menu displays the active errors. In the first row the error is displayed.
P-XX Indicates the number of the error. The last error is the one with number 0, the one before is number 1 and so on.
[XX] Indicates the message ID.
XX Indicates the floor in which the error occurred.
The third row shows the date and time when the error occured.
If there are more active errors, by pressing the arrow buttons left or right, it is possible to see the other errors.

1/6 Statistics	2/4 All errors



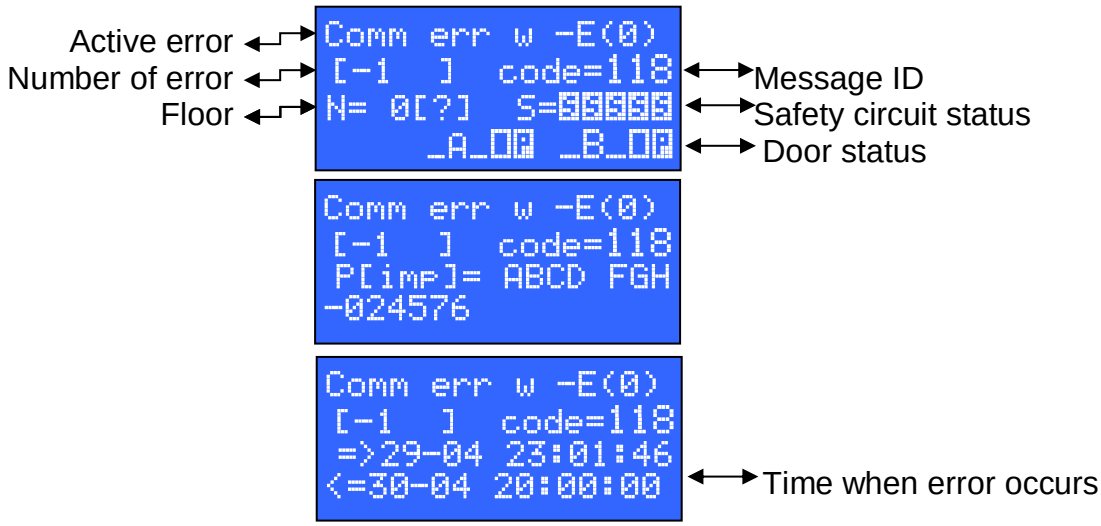
The All errors menu displays all errors. In the first row the error is displayed.
P-XX Indicates the number of the error. The last error is the one with number 0, the one before is number 1 and so on.
[XX] Indicates the message ID.
XX Indicates the floor in which the error occurred.
The third row shows the date and time when the error occured.
The fourth row shows the date and time when the error ended.
If there are more errors,by pressing the arrow buttons left or right, it is possible to see the other errors.

1/6 Statistics	3/4 Error analysis

In the error analysis menu it is possible to filter errors.
After entering the menu, select the error which you wish to filter by pressing the arrow buttons left or right. After choosing the error and pressing the „Enter“ button, the error is filtered.
If there are no errors filtered, the message *no error* apears.

3.2.1 Statistics *In firmware 4.437.14 or newer.*

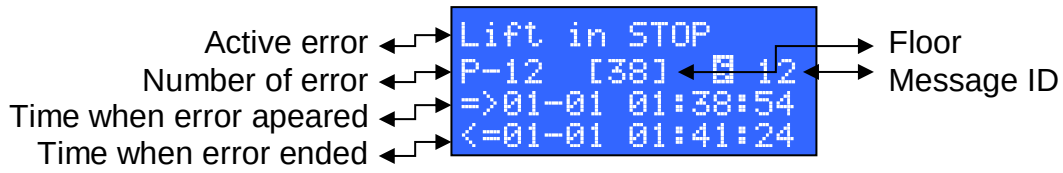
1/6 Statistics	1/4 Active errors



The Active errors menu displays active errors. In the first row the active error is displayed.
[-1] Indicates the number of the error. The last error is the one with number 0, the one before is number 1 and so on.
Code= Indicates the message ID.
N = 0[?] Indicates the floor in which the error occurred.
S=00000 Indicates the Safety circuit status
_A_00_B_00 Door status _A_00 Door is closed, _A_00 Door is opened.
A – Referent switch down 1
B – Referent switch down 2
C – Referent switch up 1
D – Referent switch up 2
E – Counter up/down switch
F – Stopping UP
G – Stopping DOWN
H – Stoping ZONE

I – Revision limit switch down
J – Revision limit switch up
K – Stopping position
L– Door zone
M – Releveling zone up
N – Stopping position in releveling
O – Releveling zone down
For more statuses of error press down button.
If there are more active errors, by pressing the arrows buttons left or right it is possible to see other errors.

1/6 Statistics	2/4 All errors

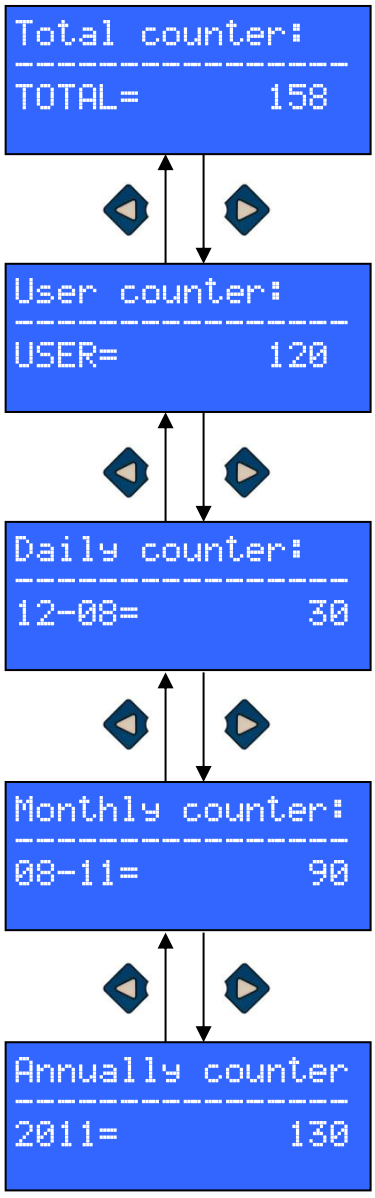


The All errors menu displays all errors. In the first row the error is displayed.
P-XX Indicates the number of the error. The last error is the one with number 0, the one before is number 1 and so on.
[XX] Indicates the message ID.
XX Indicates the floor in which the error occurred.
The third row shows the date and time when error occured.
The fourth row shows the date and time when error ended.
If there are more errors,by pressing the arrow buttons left or right, it is possible to see the other errors.

1/6 Statistics	3/4 Error analysis

In the error analysis menu it is possible to filter errors.
After entering the menu select the error which you wish to filter by pressing the arrow buttons left or right. After choosing the error and pressing the „Enter“ button, the error is filtered.
If there are no errors filtered, the message *no error* apears.

1/6 Statistics	4/4 Counters



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

By pressing the left or right arrow buttons it is possible to chose the user counter, daily counter, monthly counter and annual counter.

The “Total” counter shows the total number of starts from instaling the elevator. Total counter can be reset though the RESET menu.

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

The “Daily” counter shows the number of drives in a specific day. The counter shows the days in a active month, changing the day is done by pressing the up or down arrow buttons.

The “Monthly” counter shows the number of drives through a specific month. The counter shows the months in a active year, changing the month is done by pressing the up or down arrow buttons.

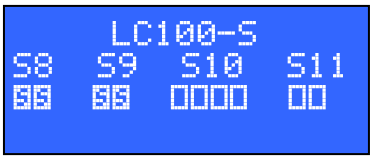
The “Annually” counter shows the number of drives trough a specific year. The counter shows the active year, changing the year is done by pressing the up or down arrow buttons.

3.2.2 Monitor

2/6 Monitor	1/2 Input/output

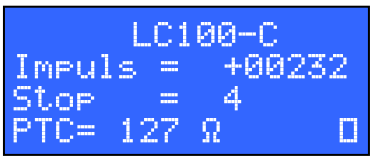
The Input/output menu is used to monitor the status of the inputs-outputs of all boards in the system. The first row shows the LC100 board. The second row displays the connector. The third row displays the pin on the connector. In the fourth row under the pin sign ▪ means that the input/output is active,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

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



Status of the input signals on the LC100-S board, for connectors XS8, XS9, XS10 and XS11. On the example XS8 and XS9 are active, other inputs are inactive.

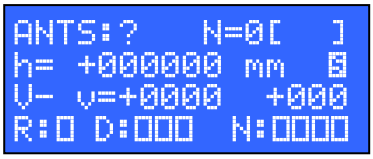
Status of the input signals on the LC100-C board for connectors XC5, XC6 and XC8



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

The third row displays the active floor.

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



ANTS:? – Communication status of ants, if ANTS is successfully connected then will be ANTS:*

h = position

V- = selected speed of the drive (V1, V2, V3, Vr, V0)

S = safety chain “stop” information

v=+0000 – information about driving speed

+000 – information about elevator position relative to the adjusted position (Fx) when the elevator stays indoor zone

R: ↑ - referent switch up are active

↓ - referent switch down are active

D: ▪▪▪ - Door zone (position of station +/- E-52)

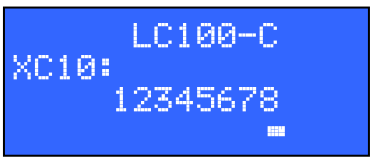
▪S▪ - Station zone (position of station + E-53 > h position > position of station – E-54)

N:▪▪▪# - releveling zone up (empty when elevator position > E-55)

▪S▪# - station zone (station position+ E-57 > h position > station position – E-58)

▪▪▪# - releveling zone down (empty when elevator position < E-56)

- elevator is +/- 8mm in the station zone



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

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

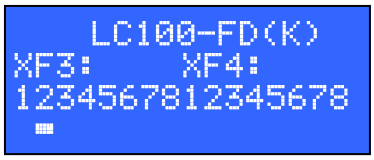
Status of the output signals on The LC100-I board for conector XI6, and status of the relay outputs XI4. The display exists only if the LC100-I board is included through the parameter A-05.

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

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

Status of output signals on the LC100-K board for connector XK9. The display exists only if the LC100-K board is included through the parameter A-06.

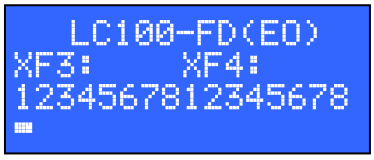
Status of input/output signals on the LC100-F board adress „C“ connected to the LC100-K board for the connectors XF3 and XF4. The display only exists if the LC100-F board adress „C“ is included through the parameter A-06.



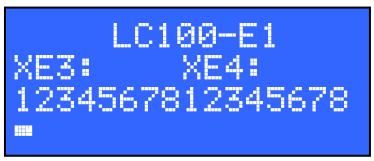
Status of input/output signals on the LC100-F board adress „D“ connected to the LC100-K board for the connectors XF3 and XF4. The display only exists if the LC100-F board adress „D“ is included through the parameter A-06.

Status of input/output signals on the LC100-E board adress „0“ for the connectors XE3 and XE4. The display only exists if the LC100-E board adress „0“ is included through the parameter A-07.

Status of the input/output signals on the LC100-F board adress „C“ conected to the LC100-E board adress „0“ for the connectors XF3 and XF4. The display only exists if the LC100-F board adress „C“ is included through the parameter A-07.



Status of the input/output signals on the LC100-F board adress „D“ conected to LC100-E board adress „0“ for the connectors XF3 and XF4. The display only exists if the LC100-F board adress „D“ is included through the parameter A-07.



Status of the input output signals on The LC100-E board adress „1“ for connectors XE3 and XE4. The display only exists if the LC100-E board adress „1“ is included through the parameter A-08.

Status of the input/output signals on the LC100-F board adress „C“ conected to the LC100-E board adress „1“ for the connectors XF3 and XF4. The display only exists if the LC100-F board adress „C“ is included through the parameter A-08.

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

Status of the input/output signals on the LC100-P, M or L boards for pins 2 and 3 on the connectors XP3 or XM3. A-10 indicates the first ten adreses of the P or M boards on side „A“. The second row displays the floor, the third row is the status of the pin 2, the fourth row is the status of the pin 3. The display only exists if the P or M boards are included through the parameter A-09.

Status of the input/output signals on the LC100-P, M or L boards for pins 2 and 3 on the connectors XP3 or XM3. A-20 indicates the second ten adreses of the P or M boards on side „A“. The second row presents floor 1=adress 11, 2=adress 12, ond so on. The third row is the status of the pin 2, the fourth row is the status of the pin 3. The display only exists if the P or M boards are included through the parameter A-09.

The next display is A-30 which is the status for adresses 21 to 30 same as for A20, than also A-40 for adresses 31 to 40.

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

Status of the input/output signals on the LC100-P, M or L boards for pins 2 and 3 on the connectors XP3 or XM3. A-20 indicates the second ten adreses of the P or M boards on side „B“. The second row presents floor 1=adress 11, 2=adress 12, ond so on. The third row is the status of the pin 2, the fourth row is the status of the pin 3. The display only exists if the P or M boards are included through the parameter A-09.

The next display is B-30 which is the status for adresses 21 to 30 same as for B-20, than also B-40 for adresses 31 to 40.

Status of the input/output signals for VF7 door A or B (VF-7[door]).

C [Command]
- [<=>] opening door
- [<!>] re-opening
- [>=<] closing door
- [>!<] nudging

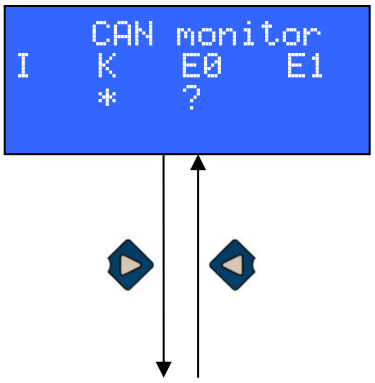
F [Operation door phase]
- [>c<] door closed
- [<o>] door opened
- [=x=] door stands between limit switches
- [<=>] opening door
- [<!>] re-opening
- [>=<] closing door
- [?] unknown status of door

S [States – emulation of relay outputs]
- O – open door
- C – close door
- B – obstacle
- F – light curtain
- T – overheating

T [Alarm – faults on VF7]
- E – encoder error
- D – driver error
- F – friction error
- O – block in opening
- C – block in closing

2/6 Monitor

2/2 CAN status

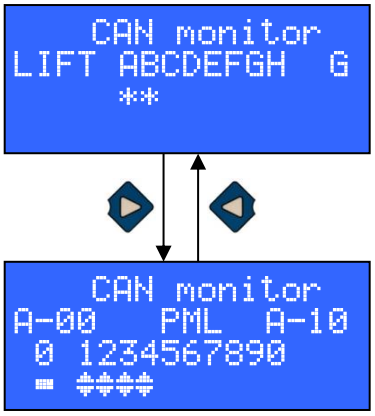


In the CAN status menu it is posible to see the status of the communication between the main control board LC100-C with other LC100 units connected via CAN bus.

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

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

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



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

The next display is the CAN communication status for P or M boards adress side „A“ on floors 1 to 10, and communication status for P or M board with adress „0“.

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

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

Sign „▪“ for „A“ elevator

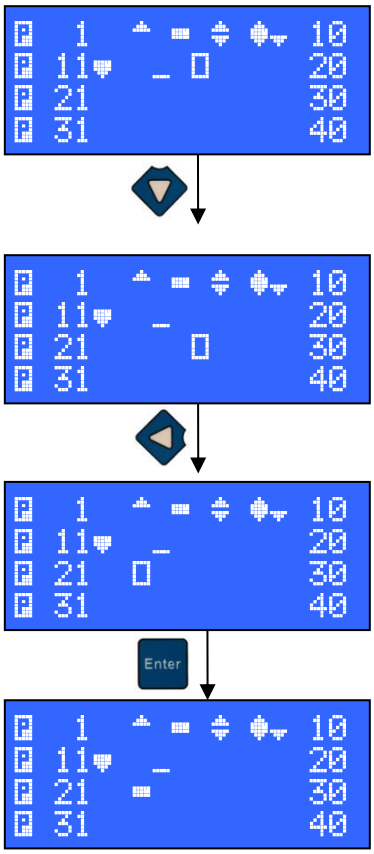
Sign „▪“ for „B“ elevator

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

The next are communication statuses for P or M boards adressed „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



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

The first row is reserved for monitoring the calls for the first ten floors.

The second row is reserved for monitoring the calls for floors 11 to 20.
The third floor is for calls 21 to 30.
The fourth row is for calls 31 to 40.

„▪“ presents the active cabin calls.
„▲“ presents the active landing calls up.
„▼“ presents the active landing calls down.
„□“ presents the cursor position on the display.
„_“ presents the active position of the cabin.

The lading and cabin calls can be active at the same time for the same floor ,as shown in the example, where in the 7th floor the landing call up and landing call down are active. In 9th floor, both of the landing calls and the cabin call are active.

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

4. Parameters

The parameters menu is used for monitoring and setting the parameters of the LC100 system. Viewing the parameters is possible without a security password, while to change the values of the parameters, a password is needed.

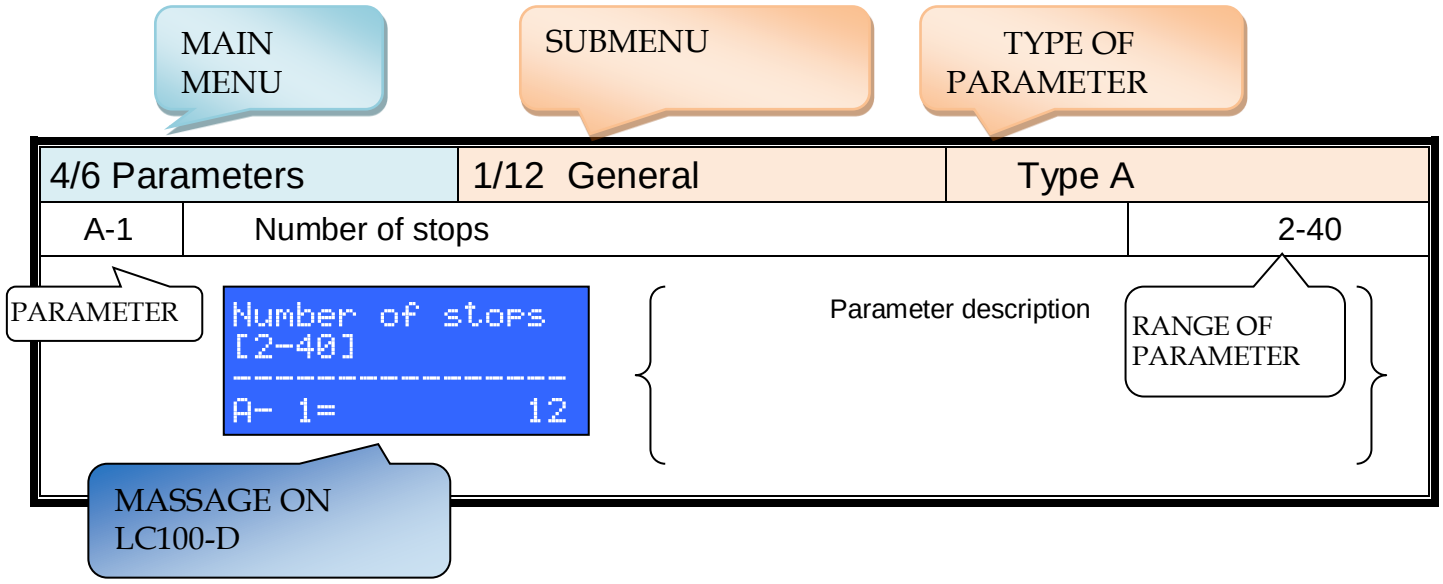
The parameters are divided into 12 submenus:

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 markings	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 press the left or right arrow buttons to choose the parameters submenu. After choosing the submenu entering is done by pressing the „enter“ button. Overview of the parameters is done by pressing the left or right button, choosing the parameter is done by pressing the enter button and changing the value by pressing the arrow buttons up or down. Confirming the change of the parameter is done by pressing the “enter” button again.

Parameter ranges are written in brackets.

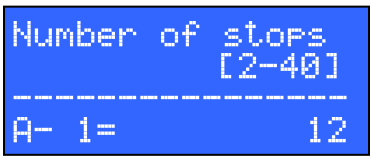
Example of parameter description in manual:



4.1 General - Type A

4/6 Parameters	1/12 General	Type A

A-1	Number of stops	2-40

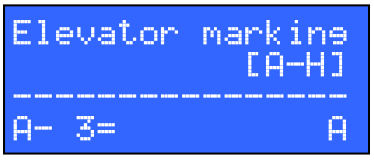


Setting the number of stops.
It is possible to set up to 40 stops.

A-2	Number of elevators	1-8

Number of elevators in multiplex mode.
It is possible to set up to 8 elevators in multiplex mode.

A-3	Elevator marking	A-H



Elevator marking in multiplex mode.
When the elevator is working in a multiplex mode it is necessairy to define the elevator marking. First elevator is „A“, second is „B“ and so on.
In multiplex modes there can't be two elevators with same marking, because the communication and the landing calls processing will not work correctly.

A-4	Evacuation	0-2

Parameter for choosing the type of emergency passanger evacuation.
0 – there is no emergency evacuation
1 – automatic evacuation of the passangers
2 – manual evacuation by pressing the brake open button from the cabin.

A-5	Configuration LC100	---

Parameter to include the LC100-I, LC100-VFD, LC100-Y, LC100-SR boards into the system.
If a board is connected via the CAN bus it needs to be included through the A-5 parameter. Including is done by placing the „*“ sign under the corresponding „board“ character.

for software version less than 4.410.00

A-5	Configuration LC100	---

Parameter to include the LC100-I, LC100-VFD, LC100-VFX, LC100-SR, LC100-SR2 boards into the system. If a board is connected via the CAN bus it needs to be included through the A-5 parameter. Inclusion is done by placing the „*“ sign under the corresponding „board“ character.

In firmware 4.410.00 or newer.

4/6 Parameters	1/12 General	Type A

A-6	Configuration LC100	---

Parameter to include the LC100-K, LC100-K2, LC100-V, LC100-V2 boards into the system. If a board is connected via the CAN bus it needs to be included through the A-6 parameter. Inclusion is done by placing the „*“ sign under the corresponding „board“ character.

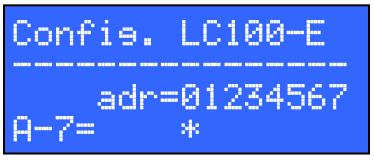
for software version less than 4.410.00

A-6	Configuration LC100	---

Parameter to include the LC100-K, LC100-K2, LC100-KZ boards into the system. If a board is connected via the CAN bus it needs to be included through the A-6 parameter. Inclusion is done by placing the „*“ sign under the corresponding „board“ character.
A - Anlog load cell
D – Digital load cell
**if any value not select automatically enable load cell through V/V2/V3 card.*

In firmware 4.442.00 or newer.

A-7	LC100-Ex	---



Parameter to include the LC100-E board into the system. Inclusion is done by placing the „*“ sign under the corresponding „board“ character. *(list below)*

0 – LC100-E0
1 – LC100-E1
2 – LC100-E0 (FC)
3 – LC100-E0 (FD)
4 – LC100-E1 (FC)
5 – LC100-E1 (FD)
6 – LC100-K (FC)
7 – LC100-K (FD)

A-8	Configuration LC100	---

Parameter to include the ADL inverter or ELGO absolute positioning system into the system.

for software version less than 4.410.00

A-8	Configuration LC100	---

Parameter to include the ADL inverter, absolute positioning system or inductive switch into the system.

ADL – VVVF ADL is on the CAN
ABS – Absolute position system is on the CAN
IMP – Inductive switch is connected to XC7.1

In firmware 4.410.00 or newer.

A-9	LC100-P, L100-M, LC100-L	---

Parameter to include P or M modules and choosing the function on the input pins X3:2 and X3:3 on the P or M modules.

A – Landing call side A
B – Landing call side B
M – for kitchen elevators up to 2 stations (star set under A & M) – LOP's must be connected to CAN 2. ***A-1 can be from 2 until 4. In case A-9 is more than 2 you need to use compatible displays.***

When there are no functions active (there are no P or M modules) landing calls must be set through configurations parameters.

A-10	Type LC100-E	---

Parameter to include the LC100-E4 board into the system. Inclusion is done by placing the „*“ sign under the corresponding „board“ character. *(list below)*
0 – LC100-E4 (address 0)
1 – LC100-E4 (address 1)
2 – LC100-E4 (address 2)
3 – LC100-E4 (address 3)

A-11	Type LC100-E	---

Used with asymmetric multiplex modes. With this parameter you chose the value of the initial stop (when the elevator activates the reference switch). Landing calls and cabin calls are automaticlly masked for work in multiplex.

A-12	Config. LC100	---

4.2 Call processing – Type B

4/6 Parameters	2/12 Call processing	Type B
B-1	Call proces type	0-3

Type of landing calls processing

0 – One call reserved.

Elevator processes landing calls only if it is in a standstill (there are no active calls, safety circuit is correct and "lift occupied" time has ended B-02.)

1 – One way collective to main floor.

If the elevator has one or more active landing calls and the car is driving, the elevator will stop for this call only if the landing call is in same direction as the car travelling, and the „80% car load" input is not active. Also the car will not stop if the elevator has passed the slow down zone for the selected floor. Otherwise the elevator will finish the drive, and then process the landing call. Landing call in the main floor which is defined by the parameter B-06 includes both directions.

2 – Full collective with two button.

Collective system with two buttons with corresponding functions landing call up, and landing call down. Stopping condition is the same as for the „one way collective" system.

3 – Full collective with one button.

Same as full collective with two buttons, but the function for landing call up and down is given through one input.

4 – One way colletive to main floor.

Same as full collective with two buttons, but the function for landing call up and down is given through one input

5 – One call reserved (in case of one button)

Used when using Program A/B side, parameter B-4=1.

Accepts just one landing call when no cabin calls are active and the elevator is in a standstill in the station.

*similar like B-1=0, works only with MLC displays and doesnt work in combination with LC100-E cards

6 – One call reserved (in case of two button).

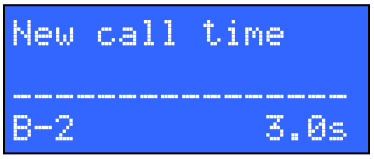
Used when using Program A/B side, parameter B-4=1.

Accepts just one landing call when no cabin calls are active and the elevator is in a standstill in the station.

*similar like B-1=0, works only with MLC displays and doesnt work in combination with LC100-E cards

In firmware 4.431.00 or newer (B-1 =5, B-1=6).

4/6 Parameters	2/12 Call processing	Type B
B-2	Priority time for car call	0-25s

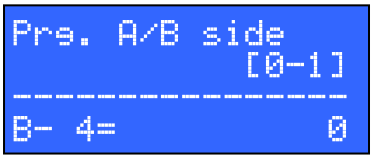


Time parameter for „Lift occupied" function when using „one call reserved" type of call procesing (Parameter B-01=0). During this time the elevator does not accept new calls and the output function „Lift occupied" FO-069 is active.
Time is mesured from the end of the previous drive.

B-3	Multiplex program	1-2

Chossing the type of call procesing in duplex elevators.
1 – Standard call procesing
2 – Program for direct calling of the „A“ elevator.
- If the landing call button is pressed longer than 3 seconds, the elevator „A“ will process this call.
3 – Destination control

B-4	Program A/B side	0-1



Program A/B side
0 – Cabin doors are opened according to the parameters for door side (D-02 to D-11) independently to landing call side. (ex. if the 2nd floor has two doors (A and B) landing call is always A side but elevator will open both doors
1 - Cabin doors are opened according to the parameters for door side (D-02 to D-11) with the side control acording to the landing call side (ex. if 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 the side on which the landing call is made.

B-5	Program lift-boy	0-1

Program lift boy is the function to control the elevator only with cabin comands. By pressing the landing call a blinking signalization is switched on in the cabin for the corresponding call. After that the lift boy is processing the calls from the cabin.
0 – „lift boy“ function not on
1 – „lift boy“ function activated

B-6	Main landing floor	1-A1

Choosing the main floor.
In the main floor the elevator with the „one way collective“ system of landing call procesing (B-1=1) has the function for both direction collecting.

B-7	Fire stop zone 1	0-A1

Defining the floor for evacuation in case of fire program 1. Fire program 1 is activated through the input with the function parameter FI-210.
When the fire program is activated the elevator erases all existing cabin and landing calls and switches on the cabin call to the fire stop zone 1 floor. Then the elevator goes to the fire stop zone 1 floor and opens the door. If the elevator was driving when the fire program was activated it will end the current drive and then go to the fire stop floor.

4/6 Parameters	2/12 Call processing	Type B

B-8	Fire stop zone 2	0-A1

Defining the floor for evacuation in case of fire program 2. Fire program 2 is activated through the input with the function parameter FI-211.
Fire program 2 has a lower priority than fire program 1.

B-9	Fire stop zone 3	0-A1

Defining the floor for evacuation in case of fire program 3. Fire program 3 is activated through the input with the function parameter FI-212.
Fire program 3 has a lower priority than fire program 2 and 1

B-10	VIP landing call	0-A1

Functions are only active when a priority call is activated on the LOP, the system will finish all existing cabin calls, leave the mulitiplex system, and won't accept new landing or cabin calls. When the cabin is empty, the elevator will finish the defined priority call (B-10), then wait a maximum of 30 sec. with opened cabin doors or until a new cabin call is selected.The system will finish one priority travel of one cabin call, finish the drive and exit from the priority travel mode and return to normal travel.

B-11	False calls erasing	0-8

Erasing the false cabin calls:

0 – **Erasing the calls is disabled**
1 – **Erasing the calls after first call**
2 – Erasing the calls after second call
3 – Erasing the calls after third call
4…8 – Erasing the calls after fourth….eight call

False call erasing: if there are more simultaneous cabin calls than set in parameter B-11. When the elevator stops at the floor and the landing doors are not opened or there is no passing through the photocell this is called a false call. The system automatically cancels all active calls.

B-12	Parking program	1-2

Choosing the parking type program.

1. The set 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 processes only landing calls from that stop and exits from the parking floor if there are more landing calls than free elevators in multiplex mode.
2. In multiplex mode, each system processes the parking function independently, the same way as in simplex mode
3. Reserved parameter
4. In parking mode, the elevator keeps the car doors open until a new car or hall call is registered

4/6 Parameters	2/12 Call processing	Type B

B-13	Parking stop 1	0-A1

Setting the parking stop 1.

0 – **Not activated** – parking program is not active.
1-A1 – **Parking floor**.
After the time set in the parameter B-14 expires the elevator goes to the parking stop, and does not open the doors.

B-14	Time for parking 1	0-41min 40s

Time for parking for parking zone 1.

B-15	Parking stop 2	0-A1

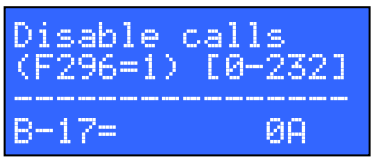
Setting the parking stop 2.

0 – **Not activated** – parking program is not active.
1-A1 – **Parking floor**.
After the time set in the parameter B-16 expires elevator goes to the parking stop and does not open the doors.

B-16	Time for parking 2	0-41min 40s

Time for parking for parking zone 2.

B-17	Landing call disable	0-41min 40s



Parameter is used to disable landing and cabin calls. Function for disabling the calls is on the input with function **FI-296**.
Parameter B-17 is used to define the condition for call disabling. How to set the B-17 parameter is explained in ***„configurating disable calls“*** manual.

B-18	Cancel cabine Calls	0-1

Parameter is used to enable/disable the cancellation of cabine calls.

If enabled, when a cabin call is active, to cancel it press again the same cabin call and it will be canceled, the elevator will stop in the nearest station.

4/6 Parameters	2/12 Call processing	Type B

B-19	Fire program standard	--

A – In fire program, opening of the doors are enable by pressing the door open button
B – Landing priority in case of evacuation. When the evacuation is active, if a landing priority call is present, the will elevator start to process priority calls and await a cabin call.
C –
D –
E –
F –
G –
H –

B-20	Fire program –close time -	0-200 s

Defining the time after which the cabin doors will close during active fire program. Condition **T-20=A**.

In firmware 4.421.00 or newer.

B-21	Time for cabine direction reserved	0-200 s

Defining the time for the reservation of cabin direction, when the target station is defined. (If value = 0, then time is 200.0 s)

In firmware 4.442.00 or newer.

B-22	Maximal number of landing calls in stop	0-20

This parameter defines the number of external calls the elevator will accept, depending on the direction of its travel while it is in motion.

In firmware 4.442.00 or newer.

4.3 Main drive - Type C

4/6 Parameters	3/12 Main drive	Type C

C-1	Main drive type	1-4

```
Main drive type
---------------
C-1 Tip=4  Mod=A
Hydraulic    HID
```

Parameter used for defining the main drive type.

1 –Unregulated Single Speed AC1 – Single speed main drive. When the drive is single speed unregulated, then the parameter E-01 must be set to 1. Also the parameter C-15 must be set to 1.

2 – Unregulated Two Speed AC2 – Two speed unregulated main drive.

3 – Regulated VVVF – V3F, VFD, Variable Voltage Variable Frequency main drive.

4 – Hydraulic HID – Hydraulic elevator.

C-2	Nominal speed V1	---

```
Nominal speed V1
----------------
       V1: VMRPI
C- 2=       *
```

Parameter is used to set speed encoding for nominal speed V1. Parameter is available only for frequency regulated elevators (C-01=3). Sign „*“ under a specific letter means that for the nominal speed, the board activates the outputs with the belonging parameter.

Description of the letters:

V – Output on which the „high speed“ function is set FO-004.

M – Output on which the „low speed“ function is set FO-003.

R – Output on which the „inspection speed“ function is set FO-005.

P – Output on which the „relevelling speed“ function is set FO-006.

I – Output on which the „intermidiate speed“ function is set FO-007.

C-3	Nominal speed V2	---

```
Nominal speed V2
----------------
       V2: VMRPI
C- 3=       **
```

Parameter is used to set speed encoding for nominal speed V2. Parameter is available only for frequency regulated elevators (C-01=3). Sign „*“ under a specific letter means that for the nominal speed, the board activates the outputs with the belonging parameter.

Description of letters is explained in parameter C-2.

C-4	Nominal speed V3	---

```
Nominal speed V3
----------------
       V3: VMRPI
C- 4=       ***
```

Parameter is used to set speed encoding for nominal speed V3. Parameter is available only for frequency regulated elevators (C-01=3). Sign „*“ under a specific letter means that for the nominal speed, the board activates the outputs with the belonging parameter.

Description of letters is explained in parameter C-2.

C-5	Stopping speed	---

```
Stopping speed
--------------
       MB: VMRPI
C- 5=       *
```

Parameter is used to set speed encoding for stopping speed. Parameter is available only for frequency regulated elevators (C-01=3). Sign „*“ under a specific letter means that for the nominal speed, the board activates the outputs with the belonging parameter.

Description of letters is explained in parameter C-2.

4/6 Parameters	3/12 Main drive	Type C

C-6	Leveling speed	---

```
Leveling speed.
-------------------
        VP: VMRPI
C- 6=        * *
```

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 for the nominal speed, the board activates the outputs with the belonging parameter.

Description of letters is explained in parameter C-2.

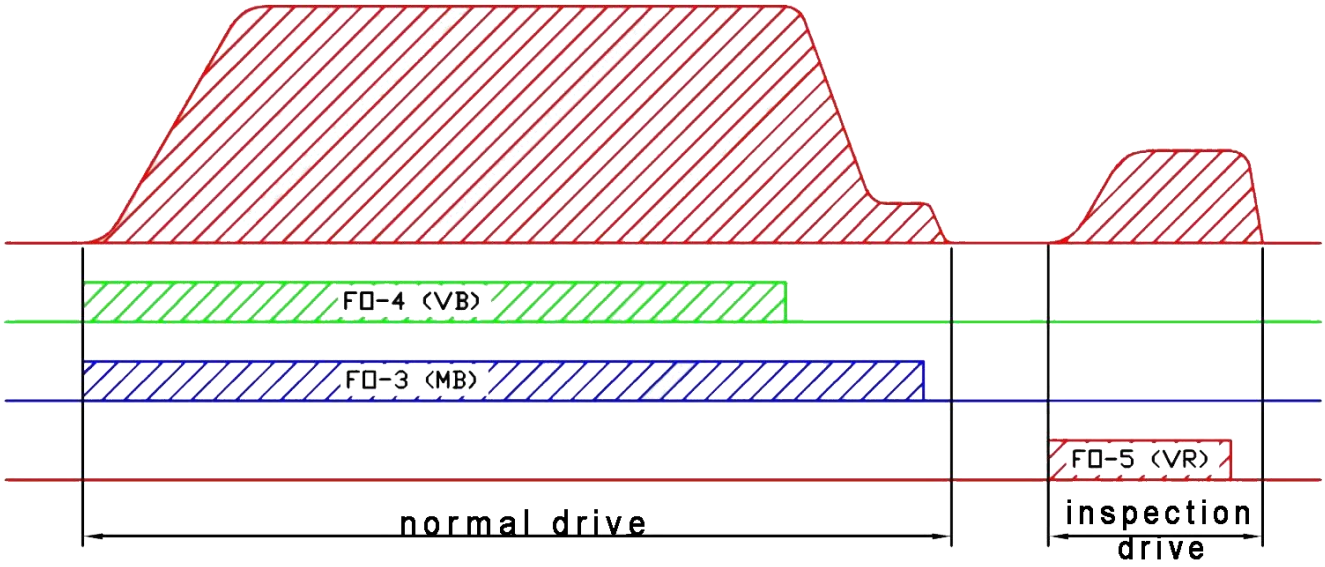
C-7	Inspection speed 1	---

```
Service speed 1
-------------------
       VR1: VMRPI
C- 7=         *  *
```

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 for the nominal speed, the board activates the outputs with the belonging parameter.

Description of letters is explained in parameter C-2.

Example for encoding the nominal speed and inspection speed.



The diagram shows an example of speed encoding for frequency regulated drives. At the start the speed encoding is set to nominal speed C-03 (ouput for nominal speed FO-004 and output for low speed FO00-3 are active). When slowing down the drive switches to levelling speed C-04 (nominal speed output is switched off FO-004, and slow speed output, FO-003 stays on).

When driving with the inspection speed, the elevator switches on the outputs defined through parameter C-05 (output for inspection speed FO-005).

The example diagram is only informative, it is based on the example of parameters in this manual. Real encoding for the speeds depends on type of frequency regulator and the wiring of the cabinet.

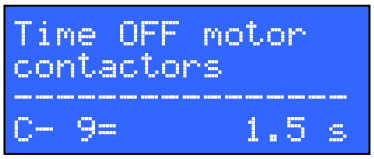
4/6 Parameters	3/12 Main drive	Type C

C-8	Inspection speed 2	0-2,5s

Parameter is used to set speed encoding for inspection speed 2. Parameter is available only for frequency regulated elevators (C-01=3). Sign „*“ under a specific letter means that for the nominal speed, the board activates the outputs with the belonging parameter.

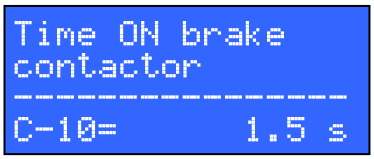
Description of letters is explained in parameter C-2.

C-9	Delay time for switching off the motor contactors	0-25s



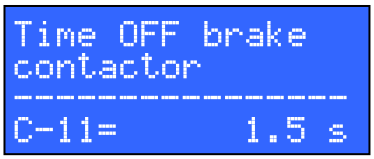
Delay for switching off the motor contactors (function FO-001 or FO-002), from the moment when the stopping comand is issued (when elevator reaches the stopping switch FI-256 or FI-257).

C-10	Time for switching on the brake contactors	0-2,5s



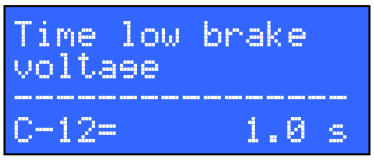
Delay time for switching on the brake contactors (function FO-011) from the moment the start command is issued (function FO-001 or FO-002).

C-11	Delay time for switching off the brake contactor	0-2,5s



Delay time for switching off the brake contactor (function FO-011) from the moment the stopping command is issued (when elevator reaches the stopping switch FI-256 or FI-257).

C-12	Time for brake holding voltage	0-25s



Time for low brake voltage. Function for brake holding voltage, FO-12 is switched on parallel with brake contactor off function FO-11 and is on during the time defined by the parameter C-12.

C-13	Working time for main drive fan	0-250s

Working time for the main drive fan FO-18. Function for fan FO-18 is switched on when the bimetal probe input signal is switched on FI-208, and it stays on during the time defined by the parameter C-13.

C-14	Starting time for motor pump	0-25s

Starting time for motor pump for hydraulic elevators C-01=4. It defines the time for the function „start pump“ FO-13.

4/6 Parameters	3/12 Main drive	Type C

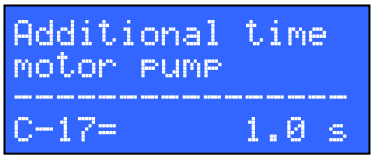
C-15	Service speed	0-1

Setting the command for service speed.
0 – Service speed is achieved with **low** speed (function FO-03)
1 – Service speed is achieved with **high** speed (function FO-04)
Parameter is active only for C-01=2 or 4, while for single speed elevators it must be set to „1“ C-01=1.
For frequency regulated elevators C-01=3 parameter is not valid because the service speed is encoded through the parameter C-05.

C-16	Time for valve UP function	0-2,5s

Parameter is used for hydraulic elevators. Functions FO-14 and FO-15 are switched on with delay time C-16, after checking that all elements for drive direction up are switched on.

C-17	Additional time for motor pump	0-2,5s



Additional working time for pump for hydraulics elevators C-01=4.
When the elevator reaches the stopping switch, the outputs for powering the valves are switched off (FO-14 i FO-15). The output for controlling the motor (FO-1) is on for the here specified additional time.

C-18	Relevelling	0-2

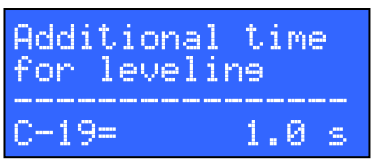
Defining the relevelling program.

0 – Relevelling is not active.
1 – Releveling is done only with closed doors.
2 – Relevelling is done with open or closed doors.
3 – Additional releveling pump.

When the elevator is in normal drive and exits the floor level, if the relevelling function is “on”, the drive issues the command for returning to the floor level.
If the cabin has stopped below the station – output for stopping in up direction FI-256 is switched off. The conditions for relevelling are that the elevator is still on the opposing stopping switch (active input FI-257) and the zone switch is active (active input FI-258). In that case the drive switches on the relleveling enable output FO-21 which then activates the safety device for relevelling. If the safety device is correct (control on the input with function FI-205), the drive switches on the relevelling in up direction. Relevelling is achieved with low speed for drive types C-01=2 or 4, while for C-01=3 relevelling is achieved with the encoded speed defined by parameter C-06.
If the cabin has stopped above the station – output for stopping in down direction FI-257 is switched off. Conditions for relevelling are that the elevator is still on the opposing stopping switch (active input FI-256) and the zone switch is active (active input FI-258). In that case the drive switches on the relevelling enable output FO-21 which then activates the safety device for relevelling. If the safety device is correct (control on the input with function FI-205) the drive switches relevelling in down direction. Relevelling is achieved with low speed for drive types C-01=2 or 4, while for C-01=3 relevelling is done with encoded speed defined by parameter C-06..

C-19	Additional relevelling time	0-2,5s

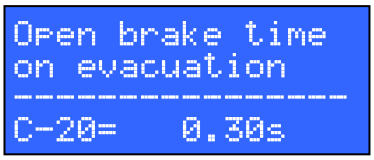
Additional time for relevelling.



During normal drive the elevator aproaches the stopping magnet in slow speed, after the stopping command, because of inertia there is still some distance traveled from command to complete stop in the floor levell. While relevelling the inertia is lower so the car sometimes will not reach the floor levell. In that case additional relevelling time is needed for the car to reach the floor level.

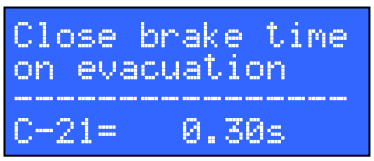
4/6 Parameters	3/12 Main drive	Type C

C-20	Open brake time on evacuation	0-2,5s



Parameter is used for setting the „on“ time of the output function FO-36.

C-21	Close brake time on evacuation	0-2,5s



Parameter is used for setting the „off“ time of the output function FO-36.

C-22	I-valve delay UP	0-2,5s

Parameter is used for hydraulic elevators. Function FO-001 is switched off with respect to delay time as defined by the parameter C-22.

C-23	I-valve delay DOWN	0-2,5s

Parameter is used for hydraulic elevators. Function FO-002 is switched off with respect to delay time as defined by the parameter C-23.

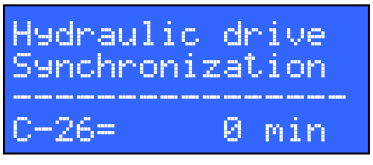
C-24	Speed reference for hydraulic elevator	0-1

Parameter is used for hydraulic elevators.
Setting the command for normal travel.
0 – Service speed is achieved with **low** speed (function FO-03)
1 – Service speed is achieved with **high** speed (function FO-04)

C-25	PAWL devices on elevator	0-1

Parameter is used for managmed of PAWL device.
0 – Turned OFF
1 – Turned ON
**** it works only with absolute positioning system E-1 = 6***
* - ***In firmware 4.443.01 or newer.***

C-26	Hydraulic drive synchronization	0-60 min



Synchronization will start after power on (after standing longer than definided by parameter C-26), then every two days.

**** it work only with PAWL device C-25 = 1***
* - ***In firmware 4.454.00 or newer.***

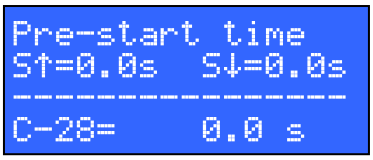
C-27	Valve A3 down delay different time	0-2,5 s

Parameter is used to set the downwards safety valve OFF delay timer, in case the valve ON and OFF timers are different. If the parameter is set as 0, OFF delay time will be same as the ON time (as set in the parameter T-14).

*(*use in case hydraulic type MORIS HM-SW)*

* - ***In firmware 4.454.00 or newer.***

C-28	Pre-start time	0-9,9 s



The system measures the door closing time and the locking time. Then parameter is the time when the pre-start program is activated which opens the brake and does not issue a reference until it locks.

* - ***In firmware 4.466.00 or newer.***

4.4 Doors - Type D

4/6 Parameters	4/12 Door	Type D

D-1	Cabin door	0-2

Cabin door type selection:
0- No door or manual door
1- One automatic cabin door
2- Two automatic cabin doors
In the case of two cabin doors, door opening in the stations must be defined over the parameters D-02 to D-11.

D-2	A-side door for stations 1 to 8	---

A-side door opening selection in case of two cabin doors (D-01=2).
Parameter D-02 select door opening in the stations 1 to 8.
Example shows door opening in the stations 1, 2 and 3.

D-3	A-side door for stations 9 to 19	---

A-side door opening selection in case of two cabin doors (D-01=2).
Parameter D-03 select door opening in the stations 9 to 16.
Example shows door opening in the stations 14, 15 and 16.

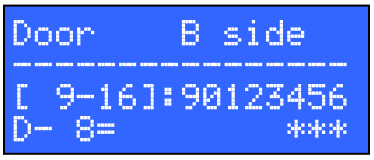
D-4, D-5, D-6	A-side door	---

D-4 - same as D-3 but for the stations 17 to 24
D-5 - same as D-3 but for the stations 15 to 32
D-6 - same as D-3 but for the stations 33 to 40

D-7	B-side door for stations 1 to 8	---

B-side door opening selection in case of two cabin doors (D-01=2).
Parameter D-07 select door opening in the stations 1 to 8.
Example shows door opening in the stations 3, 4 and 5.

D-8	B-side door for stations 9 to 16	---



B-side door opening selection in case of two cabin doors (D-1=2).
Parameter D-08 select door opening in the stations 9 to 16.
Example shows door opening in the stations 14, 15 and 16.

D-9, D-10, D-11	B-side door	

D-9 - same as D-8 but for the stations 17 to 24
D-10 - same as D-8 but for the stations 15 to 32
D-11 - same as D-8 but for the stations 33 to 40

4/6 Parameters	4/12 Door	Type D

D-12	A-side door orders	---

```
Orders  door A
--------------
       ABCDEFGH
D-12= ** * *
```

Voltage holding definition (command open or close active) for cabin door at A-side.
A – Close door output FO-41 is active **during travel**.
B – Open door output FO-40 is active **during passanger passing time**.
C – Close door output FO-41 is active when the **door is closed**.

D – Close door output FO-41 is active **during inspection travel** FI-235 or feedback control FI-201 except while open door order is active.
E – Close door output FO-41 is active **during normal travel when elevator is not in the station** (active input FI-256 or FI-257), **except while open door order is active.**.
F – Includes door manipulation over the feedback control (applies to the door B).
G – don't use nuding door A

D-13	A-side door opening time	0-25s

```
Opening time
door  A
----------
D-13=    4.0s
```

Door A opening time defining.
It is used in case of no door end-switches (FI-260 and FI-261) or as maximum door manipulation time during inspection travel.

D-14	A-side landing door type	0-3

```
Type of landing
door  A    [0-3]
-----------------
D-14=           0
```

A-side landing door type:
0 – Semi-automatic or manual door with mechanical locking.
1 – Automatic door with mechanical locking.
2 – Semi-automatic or manual door with electrical locking
3 – Automatic door with electrical locking.

D-15	A-side automatic door open in stations 1 to 8	---

```
Open door A stop
----------------
[ 1- 8]:12345678
D-15=    ***
```

Defining stations in which elevator waiting with door A open. For stations 1 to 8. Parameter has function with automatic landing door A D-14=1 or 3.
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	---

```
Open door A stop
----------------
[ 9-16]:90123456
D-16=        ***
```

Defining stations in which elevator waiting with door A open. For stations 9 to 16. Parameter has function with automatic landing door A D-14=1 or 3.
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	---

D-17 - same as D-16 but for stations 17 to 24
D-18 - same as D-16 but for stations 15 to 32
D-19 - same as D-16 but for stations 33 to 40

D-20	B-side door orders	0-7

```
Orders  door B
--------------------
       ABCDEF
D-20= ** * *
```

Voltage holding definition definition (command open or close active) for cabin door at B-side.
A – Close door output FO-45 is active **during travel**.
B – Open door output FO-44 is active **during passanger passing time**.
C – Close door output FO-45 is active when the **door is closed**.
D – Close door output FO-45 is active **during inspection travel** FI-235 or feedback control FI-201 except while open door order is active.
E – Close door output FO-45 is active **during normal travel when elevator is not in the station** (active input FI-256 or FI-257), **except while open door order is active**.
F – Includes door manipulation over the feedback control (applies to the door B).

D-21	B-side door opening time	0-25s

```
Opening time
door  B
--------------------
D-21=          4.0s
```

Door A opening time defining.
It is used in case of no door end-switches (FI-270 and FI-271) or as maximum door manipulation time during inspection travel.

D-22	B-side landing door type	0-3

```
Type of landing
door  B    [0-3]
--------------------
D-22=             0
```

B-side landing door type:
0 – Semi-automatic or manual door with mechanical locking.
1 – Automatic door with mechanical locking.
2 – Semi-automatic or manual door with electrical locking
3 – Automatic door with electrical locking.

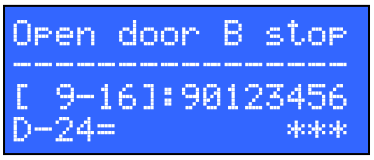
D-23	B-side automatic door open in stations 1 to 8	---

```
Open door B stop
--------------------
[ 1- 8]:12345678
D-23=    ***
```

Defining stations in which elevator waiting with door B open. For stations 1 to 8. Parameter has function with automatic landing door B D-22=1 or 3.
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.

4/6 Parameters	4/12 Door	Type D

D-24	B-side automatic door open in stations 9 to 16	---



Defining stations in which elevator waiting with door B open. For stations 9 to 16. Parameter has function with automatic landing door B D-14=1 or 3.
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.

D-25, D-26, D-27	Door B open	---

D-25 - same as D-24 but for stations 17 to 24
D-26 - same as D-24 but for stations 15 to 32
D-27 - same as D-24 but for stations 33 to 40

D-28	Preopening	0-1

Door preopening:

0 – Door preopening **off**.
1 – Door preopening **on**.

D-29	Preopening delay	0-2,5s

Door open delay time in preopening mode.

D-30	Passenger passing time	0-25s

Door open time when elevator comes to the station.

D-31	Passenger passing time after photocell	0-25s

Passenger passing time after photocell input is activated or landing door opening if not automatic.
Interrupting FI-263 or FI-273 open door time is set by parameter.

4/6 Parameters	4/12 Door	Type D

D-32	Passenger passing time after cabin call	0-25s

Passenger passing time after new cabin call while in station.
By giving new cabin command passenger passing time is set by parameter.

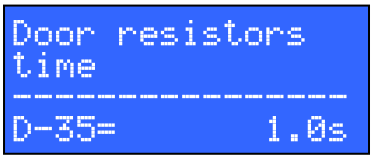
D-33	Door deceleration time	0-25s

Parameter is used to activate input function FO-42 (for A door) or FO-46 (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

Parameter is time with no active commands for open and close door while reversing.

D-35	Door resistors time	0-25s



The parameter is the time of the resistors to reduce the mechanical strain of the door if resistor function is in use FO-43 for A-side door, FO-47 for B-side door.

D-36	Door locking time	0-2,5s

After door lock acivating, 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.

D-37	Flaster effect ligh curtain A	0-250 s

The parameter is the time how long input FI-263 “Photocell door A” can be active before starting door nudging.

D-38	Flaster effect ligh curtain B	0-250 s

The parameter is the time how long input FI-273 “Photocell door B” can be active before starting door nudging.

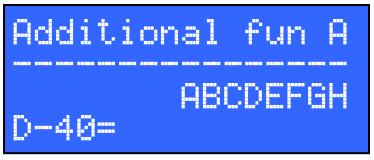
4/6 Parameters	4/12 Door	Type D

D-39	Error detection light curtain (EN81-20)	0-250

Parameter is used to enable/disable light curtain error detection.

Detection works on way that look input FI-263/FI-273 and cabin calls. If they have cabin call and don't have active inputs more seted value. Controler detect light curtain error and start close door in nudging.

D-40	Additional funcitions of door A	

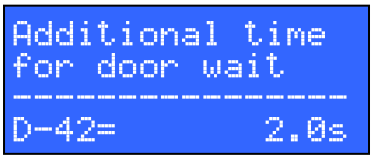


A – Work in case of light curtain error detected with input FI-336.
B – Work in case of light curtain error detected with D-37 parameter.
Disabled – keep opened door in the station
Enabled – start closing doors with nudging
C – If issue with light curtain detected through algoritam of D-39 parameter
Disable – stay in the station with opened door
Enable – resumes closing door with low speed
D – Enable testing procedure of safety cabin and locking contact.
E – Locking device checking point
Disable – checking locking contact through signal of locking contact (must be turned off)
Enable – checking locking contact through signal cabin door A (must be turned off)
F – Disable opening door B if door A are open. (Priority in door opening have door A)
G –
H – Enable door A opening after first travel or after switching power on. (Must be set **T-20 = D**.)

D-41	Additional functions of door B	

A – Work in case of light curtain error detected with input FI-337.
B – Work in case of light curtain error detected with D-38 parameter.
Disabled – keep opened door in the station
Enabled – start closing doors with nudging.
C – If issue with light curtain detected through algoritam of D-39 parameter
Disable – stay in the station with opened door
Enable – resumes closing door with low speed
D – Enable testing procedure of safety cabin and locking contact.
E – Locking device checking point
Disable – checking locking contact through signal of locking contact (must be turned off)
Enable – checking locking contact through signal cabin door B (must be turned off)
F – Disable opening door A if door B are open. (Priority in door opening have door B)
G –
H – Enable door B opening after first travel or after switching power on. (Must be set **T-20=D**.)

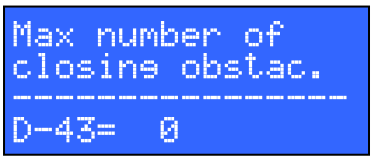
D-42	Additioonal time for door wait	0-250s



When function FI-340 or FI-341 are active, with this parameter set how much door will be opened.

4/6 Parameters	4/12 Door	Type D

D-43	Max number of closing obstac.	0-20



With parameter define maximum numbers of obstacle or photocell at closing.

Counter are reseted when door are closed.

After reaching the counter, the elevator exits from group work, reporting errors (which are normally reported with a long active signal).

D-44	CAN door control	--

In case of use door on CAN open.

A – Enable VF7 for door A

B – Enable VF7 for door B

F – Information of light curtain taked from VF7 *(***disable** – *standard input **FI-263/FI-273**)*

T – Information of overheating taked from VF7 (**disable** – *standard input **FI-338/FI-339**)*

4.5 Positioning - Type E

4/6 Parameters	5/12 Positioning	Type E

E-01	Positioning type	1-6

Choosing the positioning type:

1 – Positioning type for one speed elevator. 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.

2 – Positioning type with two switches for counting. There are also two referent switches and stopping switch. Elevator counts the floors +1 when pasing 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.

3 – Possitioning type with bistabile counting switch. 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.

4 – Positioning type with inductive switch. There are also two referent switches and stopping switch. Elevator countc the floors accordint 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.

5 – Positioning type with inductive switch and two nominal speeds. 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 C-07 and slows down while passing the lower referent switch FI-251 or FI-253. Driving betwen two next floors is always done with lower speed C-07. Driving two or more floor distances elevator is driving with nominal speed C-03.

If the relevelling (C-18=1 or 2) or preopening the doors (D-28=1) is activated then there are two stopping switches: stopping UP (FI-256) and stopping DOWN (FI-257), and one switch for door zone (FI-258).

If there is no releveling or preopening the doors activated one stopping switch is used. It is connected to input with function stopping UP (FI-256) and it is used for stopping in both direction.

Connecting the positioning switches and magnets position in the shaft is explained in appendix POSITIONING.

***6 – Absolute positioning system** is an exclusive and innovative solution that provides absolute positioning down to +/-1 mm. An absolute positioning system shall determine the absolute position and velocity of the elevator car as it transits the histway by reading fixed installed code tape in the hoistway using an absolute encoder.

For ANTS Safe procedure in end of document – appendix 4

* - ***In firmware 4.437.14 or newer.***

Driving diagram with parameters are described in positioning description page.

E-02	Learning drive direction	0/1

Choosing the direction for the learning drive. It is possible to chose direction for the possitioning type E-01=1, 2 i 3. While when using positioning type 4 or 5 parameter is not in use.

0 – Learning drive is in direction UP

1 – Learning drive is in direction DOWN.

E-03	Decelerating zone correction [imp]	0-250imp

Parameter is active when using positioning type E-01=5 if there are no referent switches inputs defined (functions FI-251 and FI-253). Decelerating zone for nominal speed is defined as a sum of impulses for lower speed zone and this parameter. When using this positioning type 5 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.

4/6 Parameters	5/12 Positioning	Type E

E-04	Preopening speed [imp/s]	0-100imp

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.

E-05	Stopping delay in direction UP	0-2,5s

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.

Parameter is used for leveling adjustment and it is active for all floors.

Leveling adjustment for each floor by itself is done by parameters for stopping F-XX.

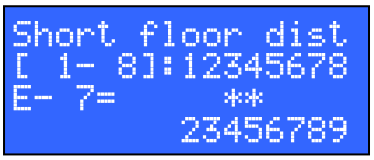
E-06	Stopping delay in direction DOWN	0-2,5s

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.

Parameter is used for leveling adjustment and it is active for all floors.

Leveling adjustment for each floor by itself is done by parameters for stopping F-XX.

E-07	Short floor distance 1-8	---



Parameter for defining short floor distances for floors 1 to 8.

Short floor means that the distance betwen two floors is shorter than the deceleration distance.

Setting the short floors is done by putting the „*“ sign betwen the floors wich have the short distance.

Between the floors that are set elevator is driving with slow speed.

On the example between the 3th and 4th floor and betwen 4th and 5th floor elevator will drive in slow speed.

E-08	Short floor distance 9-16	---

Parameter for defining short floor distances for floors 9 to 16.

Short floor means that the distance betwen two floors is shorter than the deceleration distance.

Setting the short floors is done by putting the „*“ sign betwen the floors wich have the short distance.

Between the floors that are set elevator is driving with slow speed.

On the example between the 12th and 13th floor and betwen 15th and 16th floor elevator will drive in slow speed.

E-09,E-10,E-11	Short floor distance	---

E-09 - same as E-08 but for floors 17 to 24
E-10 - same as E-08 but for floors 15 to 32
E-11 - same as E-08 but for floors 33 to 40

4/6 Parameters	5/12 Positioning	Type E

E-12	Decelerating distance for speed V2 [imp]	1.00-3.00

Parameter is used for positioning type 5. E-12 represent the decelerating zone for V2. If there is an input for second referent switch FI-251 and FI-253 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

R1 – is deceleration distance for V1.

E-12 – represent R2 (deceleration distance for V2)

I.e. Decelerating zone for V1 is 1m (I.e 1000imp) where speed V1=1m/s.

If there is need to set aditional speed V2=1,6m/s with deceleration distance 2,5m E-12 will be set to E-12=2.5xR1. Then deceleration zone for V2 is set to 2,5m (2500imp). Assumption is that 1mm=1imp Which can be diferent in real situation.

E-13	Decelerating distance for speed V3 [imp]	1.00-3.00

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

R2 – is deceleration distance for V2 (parameter E-12).

E-13 – represent R3 (deceleration distance for V3)

I.e. Decelerating zone for V2 (E-12) is 2,5m (I.e 2500imp) where speed V2=1,6m/s.

If there is need to set aditional speed V3=2m/s with deceleration distance 5m E-13 will be set to E-13=2.00xR2. Then deceleration zone for V3 is set to 5m (5000imp). Assumption is that 1mm=1imp Which can be diferent in real situation.

E-14	Condition distance for V2 [imp]	1.00-3.00

Parameter is used to determine drive speed. When drive command is given elevator will start with the speed V2 if condition E-14 is satisfied.

R2 – presents deceleration distance for V2 (parameter E-12).

I.e. We want to drive with the speed V2 (1,6m/s) if the driving distance is more than 6m. E-12 is set to 2,5m (2500imp), than we must set the E-14 to E-14=2.4xR2 which means 6m (6000imp).

If the drive distance is more than E-14 (6m) the elevator will drive with the speed V2 othervise it will start with V1.

E-15	Condition distance for V3 [imp]	1.00-3.00

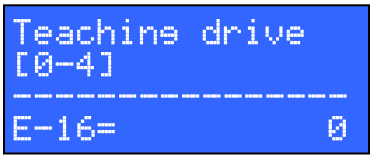
Parameter is used to determine drive speed. When drive command is given elevator will start with the speed V3 if condition E-15 is satisfied.

R3 – presents deceleration distance for V3 (parameter E-13).

I.e. We want to drive with the speed V3 (2,5m/s) if the driving distance is more than 12m. E-13 is set to 5m (5000imp), than we must set the E-15 to E-15=2.4xR3 which means 12m (12000imp).

If the drive distance is more than E-15 (12m) the elevator will drive with the speed V3 othervise it will check conditions for speed V2 (parameter E-14)

E-16	Learning travel	0-4



Parameter is used to activate the learning travel when using positioning type E-01= 4 ili 5.

When all Positioning elements are set and parameters E-12 to E-14, if used, learning drive must be done.

To do a learning travel parameter E-16 must be set to „0“, after that parameter change the value as follows:

0 – Learning drive command is given.
1 – Learning drive in progres.
2 – Calculating the results
3 – Learning travel done
4 – Doing teaching drive after service/recall travel and power on

4/6 Parameters	5/12 Positioning	Type E

E-41	Distance for service spd UP	0-65535

Parameter is used for positioning type 6.
It is used for limit point of service travel in UP direction.

In firmware 4.437.14 or newer.

E-42	Distance for dec.speed 1-UP	0-65535

Parameter is used for positioning type 6.
Deceleration zone for speed 1 in up direction.

In firmware 4.437.14 or newer.

E-43	Distance for dec.speed 2-UP	0-65535

Parameter is used to determine drive speed.
Deceleration zone for speed 2 in up direction.

In firmware 4.437.14 or newer.

E-44	Distance for dec.speed 3-UP	0-65535

Parameter is used to determine drive speed.
Deceleration zone for speed 3 in up direction.

In firmware 4.437.14 or newer.

E-45	Distance for service spd DOWN	0-65535

Parameter is used for positioning type 6.
It is used for limit point of service travel in DOWN direction.

In firmware 4.437.14 or newer.

4/6 Parameters	5/12 Positioning	Type E

E-46	Distance for dec.speed 1-DOWN	0-65535

Parameter is used for positioning type 6.
Parameter is used to determine drive speed. When drive command is given elevator will start with the speed V1 if condition E-46 is satisfied.
R1 – presents deceleration distance for V1 (parameter E-42).

In firmware 4.437.14 or newer.

E-47	Distance for dec.speed 2-DOWN	0-65535

Parameter is used for positioning type 6.
Parameter is used to determine drive speed. When drive command is given elevator will start with the speed V2 if condition E-47 is satisfied.
R2 – presents deceleration distance for V2 (parameter E-43).

In firmware 4.437.14 or newer.

E-48	Distance for dec.speed 3-DOWN	0-65535

Parameter is used to determine drive speed.
Parameter is used to determine drive speed. When drive command is given elevator will start with the speed V3 if condition E-48 is satisfied.
R3 – presents deceleration distance for V3 (parameter E-43).

In firmware 4.437.14 or newer.

E-49	Distance for selected speed 0	0-65535

Parameter is used for positioning type 6.
Parameter define low distance space between stations,
When set value is smaller then station distance, elevator will drive with V0 (low speed).

In firmware 4.437.14 or newer.

E-50	Distance for selected speed 2	0-65535

Parameter define the distance for the selection of driving speed V2.
If speed V2 are not seted then elevator driving with V1 speed.

In firmware 4.437.14 or newer.

4/6 Parameters	5/12 Positioning	Type E

E-51	Distance for selected speed 3	0-65535

Parameter define the distance for the selection of driving speed V3.
If speed V3 are not seted then elevator driving with V1 speed.

In firmware 4.437.14 or newer.

E-52	Door open zone	0-65535

Parameter is used for positioning type 6.
Door opening zone in floor (for preopening and door opening permission in seted value when elevator come to station)

In firmware 4.437.14 or newer.

E-53	Distance for stop in drive UP	0-65535

Parameter is used for positioning type 6.
With E-53 parameter determine the station zone UP.

In firmware 4.437.14 or newer.

E-54	Distace for stop in drive DOWN	0-65535

Parameter is used for positioning type 6.
With E-54 parameter determine the station zone DOWN.

In firmware 4.437.14 or newer.

E-55	Distance for releveling UP	0-65535

Parameter is used for position type 6.
With this parameter determines the station zone in the upward direction.

In firmware 4.437.14 or newer.

4/6 Parameters	5/12 Positioning	Type E

E-56	Distance for releveling DOWN	0-65535

Parameter is used for positioning type 6.
With this parameter determines the releveling zone in the downstream direction.

In firmware 4.437.14 or newer.

E-57	Distance for stop in releveling UP	0-65535

Parameter is used for positioning type 6.
With this parameter determines releveling stop zone in upward direction.

In firmware 4.437.14 or newer.

E-58	Distance for stop in releveling DOWN	0-65535

Parameter is used for positioning type 6.
With this parameter determines releveling stop zone in downstream direction.

In firmware 4.437.14 or newer.

E-59	Initialization of position	0-65535

Parameter is used for positioning type 6.
With parameter E-59 we make inicialization of initial stop.
It can start from 0 (bellow the bottom station), 1 (correct in first station) or other station.

In firmware 4.437.14 or newer.

E-60	ABS SAFE Mode	--

A – ABS SAFE include
If ABS SAFE enable, then UCM are enable and work on next way:
UCM = elevator with bridged door go out from door zone and drive with higher speed than 0.3 m/s with bridged door. Detection of UCM make interrupt of safety chain.
Reset of UCM with LC100 or PSU 02

B – Reduced headroom
End of revision are on position 1200 mm below end limit switch UP and can not be reduced.

C – Reduced pit
End of revision are on position 1200 mm over end limit switch DOWN and can not be reduced.

D – Inspection wired even is not reduced pit or headroom
Suggested if is not RPH.
If it not RPH and if is not seted inspection wired system, not control revision speed 0.6 m/s and do not have safety disable door bridging on revision.

E – Door bridging fast start inside flash zone 20 mm (additional function)
Releveling, preopening and door control are activated via predefined parameters and information from ANTS SAFE is used if it is on.

F – Don't use door zone, referent switches, don't need to do teaching travel. Just look limit switches. In case for elevator with one speed *(0.15 m/s)*

0 – Teaching drive done with speed V0 (if not def.then do with service speed)
1 – Teaching drive done with speed V1 (if not def.then do with service speed)

In firmware 4.458.00 or newer.

E-61	ABS SAFE Zone reduced speed UP	0-65535 cm

Retardation safety zone UP in cm for v > 1 m/s
It can be used at speed Vn > 1 m/s.
It is limited speed in zone if is set.
If value equal 0, function are disabled.

In firmware 4.442.00 or newer.

E-62	ABS SAFE Zone reduced speed DOWN	0-65535 cm

Retardation safety zone DOWN in cm for v > 1 m/s
It can be used at speed Vn > 1 m/s.
It is limited speed in zone if is set.
If value equal 0, function are disabled.

In firmware 4.442.00 or newer.

E-63	ABS SAFE Zone door opening	0-200 mm

Defining door opening zone.

In firmware 4.442.00 or newer.

E-64	ABS SAFE Nominal speed	0.0-5.00 m/s

Defining nominal speed of elevator.

In firmware 4.442.00 or newer.

E-65	Landing mode	

Reserved parameter.

In firmware 4.458.00 or newer.

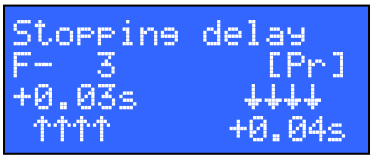
E-66	Direct landing correction	0-250 mm

Parameter definite correction of deceleration point, when is used direct to floor.

In firmware 4.458.00 or newer.

4.6 Stopping - Type F

4/6 Parameters	6/12 Stopping	Type F
F-xx	Stopping delay for x floor	0-2,55s



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.

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.

4/6 Parameters	6/12 Stopping	Type F
F-xx	Stopping position for x floor	---

Parameter for setting the level position. Parameter F-41 is setting for 1th floor, F-42 for 2nd … In bracket the floor marking is shown which is set through parameters G-XX.

In firmware 4.437.14 or newer.

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	---

Parameters for setting the lift markings. Lift marking is displayed on LC100-M landing call boards.

Parameter G-00 is marking for the unknown car position G-01 is marking for the first floor, G-02 for second…

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).

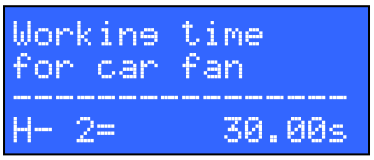
4.8 Timers - Type H

4/6 Parameters	8/12 Timers	Type H

H-01	Type of car fan control	1-2

Parameter for setting the car fan control type.
1 – Car fan (function FO-50) is switched on after the input car fan is trigered (FA-561) and is switched on time set in parameter H-02.
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.

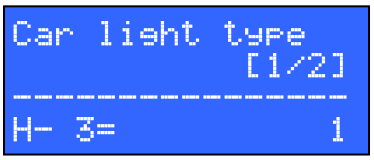
H-02	Working time for car fan	0-250s



Parameter for setting the working time for car fan.

4/6 Parameters	8/12 Timers	Type H

H-03	Car light control type	1-2



Car light control type selection.

1 – Standard – Function for controling the cabin light FO-51 is switched off afert time set in H-04 expired.
2 – Reserved.

H-04	Working time for the car light	0-250s

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.

H-05	OFF time for shaft light	0-250s

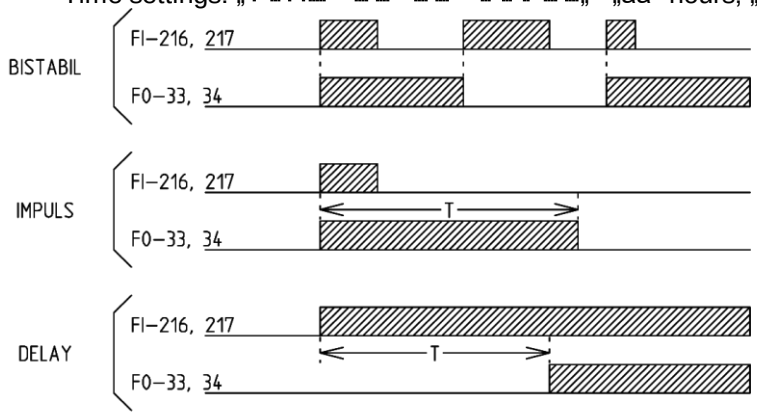
Parameter for setting the time to power off the shaft light. The shaft light is switched on automaticly when inspection input is activated (FI-235), and it is switched off after putting to normal drive and this time has expired.

H-06	Programable relay T1	---

Parameter for setting the time relay T1 . It is possible to set 3 type of time relays:

1. ***BISTABIL*** Output function FO-33 changes every time on positive puls on input function FI-216.
2. ***IMPULS*** Output function FO-33 switches of after time set in this parameter after positive puls on input function FI-216.
3. ***DELAY*** Output function FO-33 is activated after time set in this parameter after positive puls on input function FI-216.

Time settings: „TIME=aa:bb:cc.dd„ - „aa“-hours, „bb“ minutes, „cc“ seconds, „dd“miliseconds“



ACTIVE STATE INPUT OR OUTPUT

H-08	Programable relay T2	---

Parameter for setting the programabile relay T2. Setting is the same as for T1, parameter H06. Input function FI-217, output function FO-34. ***if BISTABIL are sets then throught CAN message work out of order, and B-17 parameter. (included in new firmware version 4.328.0 or higher).***

4/6 Parameters	8/12 Time	Type H

H-10	GONG signal duration	0-2,55s

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.

For display LC100-M or L displays to signalize gong PML parameters must be set (mark „*“ below letter „C“ for stations with LC100-M or L display).

H-11	UNLOCKING signal duration	0-25s

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.

For display LC100-M or L to signalize unlocking PML parameters must be set (mark „*“ below letter „E“ for stations with LC100-M or L display).

H-12	PHOTOCELL signal activation	0-250s

Parameter is used to delay photocell (FI-263 or FI-273) signalization on LC100-M or L display.

If the photocell input is active longer than the time set by parameter, it is saved in the statistic and signaled on display.

For display LC100-M or L to signalize photocell activity PML parameters must be set (mark „*“ below letter “I“ for stations with LC100-M or L display).

H-13	CLOSING OBSTACLES signal activation	0-250s

Parameter is used to delay closing door obstacle (FI-262 or FI-272) signalization on LC100-M or L display.

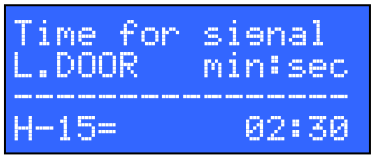
If the closing door obstacle input is active longer than the time set by parameter, it is saved in the statistic and signaled on display. For display LC100-M or L to signalize closing door obstacle PML parameters must be set (mark „*“ below letter “I“ for stations with LC100-M or L display).

H-14	STOP signal activation	0-41min40s

Parameter is used to delay safety circuit STOP interrupt signalization on LC100-M or L.

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 LC100-M or L to signalize safety circuit STOP interruption PML parameters must be set (mark „*“ below letter “G“ for stations with LC100-M or L display).

H-15	LANDING DOOR signal activation	0-41min40s



Parameter is used to delay landing door open on LC100-M or L display.

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 LC100-M or L to signalize landing door open PML parameters must be set (mark „*“ below letter “H“ for stations with LC100-M or L display).

4/6 Parameters	8/12 Time	Type H

H-16	Save energy mode	0-1

Parameter is used for switching on the power saving mode. In the power saving mode after time set in parameter H-17 all the displays are switched off and output for power saving FO-57 is switched on.
Trough relay with the power saving FO-57 it is posible to disconnect all unnessesary power consumers.

H-17	UNLOCKING signal duration	0-25s

The parameter is the time after which power energy mode is switched on.

H-18	Output FO-058 OFF delay	0.0-3.0s

Output function FO-058 OFF delay. It is used for A3 overspeed governer.

H-19	Acceleration time (for time positioning)	0.0-20.0s

Estimated elevator acceleration time.
(time it takes the elevator to reach full speed for standstill; used only for time positioning system)

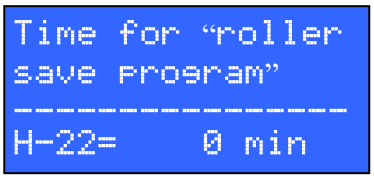
H-20	Time for OFF FUN-58 for AMI	0-250s

Parameter for setting the additional time to hold on function FO-058 when elevator arrive to station. Function FO-058 is switched on automaticly when elevator start drive.

H-21	Time press ALARM for FO-53 ON	0-120s

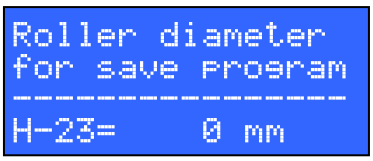
Parameter for define when output FO-53 will be active, when alarm button are active.

H-22	Time for “roller save program”	0-240min



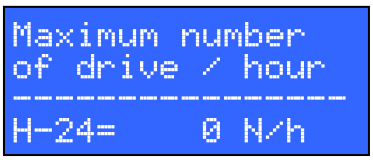
Parameter for defining time when the roller saving program will be activated.
H-23 parameter define diameter of roller.

H-23	Roller diameter for save program	0-250mm



Parameter is used in case of rollers.
*This program can be used only when is used absolute system **(E-1=6)**.*
With this parameter define roller diameter, the program work to minimize elevator movement to accommondate a change in role when standing longer than H-22 definidet time.
* - ***In firmware 4.455.05 or newer.***

H-24	Maximum number of drive / hour	0-240

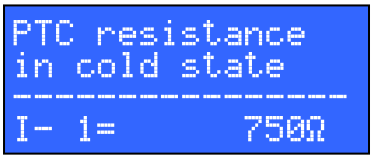


Parameter is used to determine the maximum number of runs per hour.
* - ***In firmware 4.455.05 or newer.***

4.9 Protection - Type I

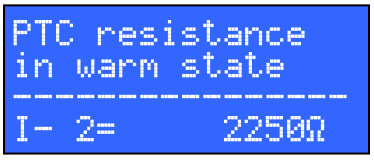
4/6 Parameters	9/12 Protection	Type I

I-01	Cold state PTC resistance	0-9999Ω



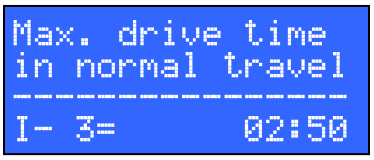
Cold state PTC resistance.
When the resistance of the PTC probe connected to the input XC8:2 rises above the value defined by parameter I-02 elevator ends current travel, activates motor fan, if there is any, and waits for PTC resistance to fall below the value I-01.

I-02	Warm state PTC resistance	0-9999Ω



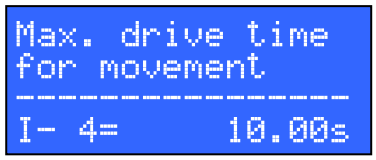
Warm state PTC resistance.

I-03	Normal travel max. time	0-250s



Maximum time of normal travel, from first to last station.

I-04	Time between station.	0-250s



Maximum time between station. Otherwise elevator indicates error „start failure“.

I-05	Leveling max. time	0-250s

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.“

I-06	Evacuation max. time	0-250s

Maximum evacuation travel time. Maximum passenger evacuation time from cabin.

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 apear. If signal does not apear 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 apear. If signal does not apear „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 apear. 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

Parameter for setting the temperature for control board fan. If the procesor temperature reaches the set value the output with the function FO-35 is switched on. Output for control board fan stays active until the temperature falls below the value set in I-13.

I-13	Temperature for switching the control board fan OFF	0-85°C

Parameter for setting the temperature for switching off the control board fan.

I-14	Conditions reset	

A – After activating end limit switch for automatic drive **reset** is required
B – After activating car lock deivce for automatic drive **reset** is required.
C – After activating service pit doors for automatic drive **reset** is required.
D – After service drive from the cabin for automatic drive **reset** is required.
E – After service drive from the pit for automatic drive **reset** is required.
F – After „Start failure ID-64“ for automatic drive **reset** is required.
G – After car or landing door contact error has ocurded drive **reset** is required.
H – After contactors turning on failure for automatic drive **reset** is required

I-15	Conditions mode	

A – ***not selected –*** *on the service drive stop on the reference switch.*
selected - On the service drive stop on stopping magnet (with low speed after reference switch).
B – ***not selected -*** levelling speed before reference switch on recall travel.
selected - Service speed 1(C-7) before reference switch on recall travel.
C – ***not selected*** - levelling speed after reference switch on recall travel.
selected - Service speed 1(C-7) after reference switch on recall travel.
D – enable doors opening with service buttons on the cabin.
E – enable doors opening on the recall drive with buttons for driving if elevator is in the floor level
F – Recall travel are not possible without vertical position of pillar in the pit (FI-309)
G – Inspection from the pit reset by input XM3.3 *(Landing Call DOWN)* connected on **display address 1**. * *This procedure is use by key switch or additional sensor (monostabile magnetic).*

- *Start procedure by connected input for a minimum 2 second and deactivate in maximum time of additional 10 seconds.*
  On display You can see:
  r0 *start procedure (input must be released)*
  r1 *press button 0.0 – 2.0 seconds*
  r2 *press button more than 2 second -> waiting for release button (10 sec)*
  Waitting for continue procedure between minmum 1.0 sec and maximum 5.0 sec
  On display You can see:
  R* *RESET -> Normal travel*

***firmware on display must be newer then 4.32h/4.68i (M6/M8)**

H – Inspection from the pit reset by input XM3.2 *(Landing Call UP)* connected on **display address 1**. * *This procedure is use by landing button).*

- Start procedure by press 3 times landing button briefly with maximum time between press 1.0 sec.

On display You can see:

r0	start procedure (input must be released)
r1	press button 1st time
r2	press button 2nd time
r3	press button 3rd time

Waitting for continue procedure between minmum 1.0 sec and maximum 5.0 sec

On display You can see:

r-	waiting for continue procedure (second phase)

Continue procedure by press 3 times landing button briefly with maximum time between press 1.0 sec.

On display You can see:

r4	press button 4th time
r5	press button 5th time
r6	press button 6th time
R*	RESET -> Normal travel

***firmware on display must be newer then 4.32h/4.68i (M6/M8)**

G, H In firmware 4.446.00 or newer.

I-16	Conditions mode	

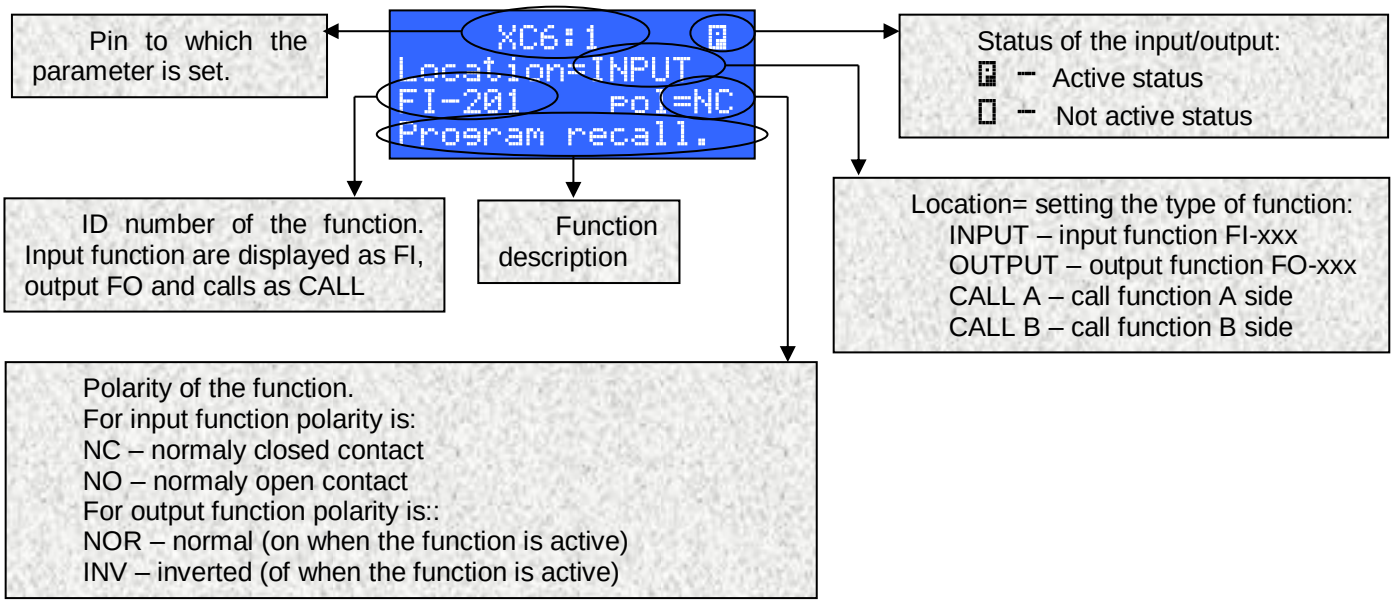
A – ***not selected*** **-** stay in the station with opened doors don't accept calls after detection UPS error.
selected - enable automatic drive after detection UPS error.
B – ***not selected*** **-** stay in the station with opened doors don't accept calls after detection cabin light error.
selected - enable automatic drive after detection cabin light error.
C – **selected –** enable detection UCM error through FI-205 (Output control function FO-160)
D – **reserved**
E – **reserved**
F – **reserved**
G – **reserved**
H – **reserved**

4.10 Configurations - Type N

4/6 Parameters	10/12 Configurations	Type N

Configurations menu is for programing 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 opene,d 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
FO-001	DRIVE UP	Up travel command.
FO-002	DRIVE DOWN	Down travel command.
FO-003	LOW SPEED M	Slow speed travelling command. **(In case of C-1 = 4 then C-22, C-23 > 0)**
FO-004	HIGH SPEED V	High speed travelling command.
FO-005	SERVICE SPEED R	Inspection speed travelling command.
FO-006	LEVELING SPEED P	Leveling speed travelling command.
FO-007	MEDIUM SPEED I	Medium speed travelling comand.
FO-008	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 T-5.
FO-009	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.
FO-010	INVERTER RESET	Frequency inverter reset function. Function is on when the input FI-226 „inverter control“ is activated. Reset function is on for 1s and repeats to switch on every 5s until inverter control is ok.
FO-011	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 C-10 and C-11.
FO-012	LOW BRAKE VOLTAG	Function for energy saving on the brake. Function is powered simultaneously with the brake control function and lasts time which is programable through parameter C-12.
FO-013	START PUMP (Y)	Function for starting the pump on the hydraulic elevators.
FO-014	VALVE UP	Function for powering the up direction valve.
FO-015	VALVE DOWN	Function for powering the direction valve.
FO-016	VALVE HIGH DOWN	Function for powering the high speed down direction valve.
FO-017	LEVELING PUMP	Function for powering the relevelling pump.
FO-018	MAIN MOTOR FAN	Function for main motor cooling fan. Function is on when FI-208 „bimetal sensor“ is on and lasts until time C-13 expires.
FO-019	SUPPLY CONTACTOR	Supply contactor command. It is used with frequency regulated elevators with automatic evacuation of passangers. Function is on when time T-3 expires if there is no input on function for evacuation FI-207.
FO-020	UPS CONTACTOR	Emergency power supply contactor command. It is used with frequency regulated elevators with automatic evacuation of passangers. Function is on when time T-4 expires if the evacuation input FI-207 is active.
FO-021	ENABLE LEV/OPE	Function to enable relevelling and preopening the door. Function is active when releveling if the inputs „stopping zone“ (FI-258) and one of the stopping inputs (FI-256 or FI-257) are active.
FO-022	VVVF ENABLE	Frequency inverter enable function. Output is active if safety circuit is on.
FO-023	MOTOR PUMP HID	Function for motor pump used in NGV agregats.
FO-024	HIDRO UP DELAY	Aditional hydraulic pump function..
FO-025	TEST PULSE A3	Output for testing valve before start drive down for hydraulic type C (VVVF), testing time parameter T-14. **(C-22, C-23 must be 0)**
FO-026	LIFT IN STOP	Function is active when the car is in floor level - FI-256 or FI-257 is active.
FO-027	LIFT WORK	Function is active if the elevator is in normal drive, and there is no error active.
FO-028	LIFT ERROR	Function is active when the lift is in error.
FO-029	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.
FO-030	FIRE PRG ON	Fire program on function. Function is active when there is one of the fire programs active – functions FI-210 to FI-214.

NO	DYSPLAY ON LC100-D	DESCRIPTION
FO-031	END OF FIRE PRG	End of fire program function. Function is on when fire program has ended.
FO-032	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 H-05 expired. Function is not working if the function elevator test FI-219 is on.
FO-033	TIMEREL 1 OUT	Output function for time relay 1. Setting of the relay is explained in the parameters type H.
FO-034	TIMEREL 2 OUT	Output function for time relay 2. Setting of the relay is explained in the parameters type H.
FO-035	CONTR.PANEL FAN	Output function for control panel fan managment.
FO-036	BRAKE IN EVAC.	Output function for brake opening in evacuation.
FO-037	ERROR (A3)	Output function is active in case UCM fault.
FO-038	PIT LIGHT GREEN	Output function is active in case “Pillion in shaft” FI-309.
FO-039	PIT LIGHT RED	Output function is active in case “Landing door N=1” FI-308.
FO-040	OPENING DOOR A	Open door A command
FO-041	CLOSING DOOR A	Close door A command.
FO-042	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 FI-266 or FI-267.
FO-043	RESISTORS DOOR A	Function for controling 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 D-35.
FO-044	OPENING DOOR B	Open door B command
FO-045	CLOSING DOOR B	Close door B command.
FO-046	LOW SPEED DOOR B	Low speed command to door B. It is used for frequency regulated cabin doors. Function is activated acording to the functions FI-266 or FI-267.
FO-047	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 D-35.
FO-048	RETARING CAM	Function for managment the retaring cam. Function is active during drive.
FO-049	LOW VOLTAGE CAM	Low voltage control for retaring cam.
FO-050	CAR FAN ORDER	Cabin fan control function. It is activated acording to the type of control – parameter H-01. Engage time for fan is defined by parameter H-02.
FO-051	CAR LIGHT ORDER	Cabin light control function. It is activated acording to the type of control – parameter H-03. Engage time for cabin light is defined by parameter H-03.
FO-052	IMPULS NEW STOP	New stop output function. Function is impulse after changihg the floor. Engage time of the function is when cabin pass by counting switch.
FO-053	ALARM ENABLE	Alarm enable function. Function is active when the car is at floor and the doors are opened.
FO-054	IMP NEW CAR CALL	New cabin call function. Function is impulse and it is triggered every time when cabin call is activated.
FO-055	IMP.STOPPING	Stopping impulse function. Funcition is triggered when elevator is slowing down – when cabin pass by counting switch for selected floor.
FO-056	OUT OF ORDER	Function active when elevator is out of order.
FO-057	OUT SAVE ENERGY	Output function for energy saving mode.
FO-058	OUT OVERSP.G. A3	Output for powering the overspeed governor coil or for AMI safety device **For enable work with AMI device (H-20 > 0).**
FO-059	PHASE/SEQ OK	Phase sequence are correct.
FO-060	SIG. UP STAND.	Reserved direction up signalization.
FO-061	SIG. DOWN STAND.	Reserved direction down signalization.

NO	DYSPLAY ON LC100-D	DESCRIPTION
FO-062	SIG. UP TIME	Flashing reserved direction up signalization.
FO-063	SIG. DOWN TIME	Flashing reserved direction down signalization.
FO-064	SIG. NEXT UP	Next drive up signalization.
FO-065	SIG. NEXT DOWN	Next drive down signalization.
FO-068	SIG. GOGN UP	Gong for next travel up.
FO-067	SIG. GONG DOWN	Gong for next travel down.
FO-068	LIFT OCUPATED	Lift in use signalization. Function is used for single travel elevators, parameter B-01=0. Function is activated when call is made, and is deactivated when drive has ended and the time B-02 has expired.
FO-069	LIFT OCUPATED T	Flashing lift in use signalization. Function is used for single travel elevators, parameter B-01=0. Function is activated when call is made, and is deactivated when drive has ended and the time B-02 has expired.
FO-070	SIG.CAR OVERLOAD	Car overload signalization. Function is active when input 100% load is active, FI-242.
FO-071	LEAVE THE CAR	Leave the car signalization.
FO-072	PHOTOCELL ACTIVE	Photocell active signalization. Function is active when photocell side A, or side B is active, inputs FI-263 or FI-273. Output will be active after time definided with H-12 parameter.
FO-073	SIGNAL UNLOCKING	Signalization for unlocked landing door. Function is used when having semiautomatic landing doors.
FO-074	UNLOCKING DOOR A	Output function for door A unlocking device. ****from firmware 4.448.00***
FO-075	UNLOCKING DOOR B	Output function for door B unlocking device. * ***from firmware 4.448.00***
FO-076	DOOR A OPENED	Output function, active when door A is opened.
FO-077	DOOR B OPENED	Output function, active when door B is opened.
FO-078	TEST IMPULSE 1S	Output function pulsating 1s „on“ 1s „off“
FO-079	RESET OUT	Output function for reset, active when reset button on LC100-D keypad is pressed.
FO-080	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 ADRESS TABLE.
FO-081	STOP: BIN.1	Cabin position output – binary code bit 1.
FO-082	STOP: BIN.2	Cabin position output – binary code bit 2.
FO-083	STOP: BIN.3	Cabin position output – binary code bit 3.
FO-084	STOP: BIN.4	Cabin position output – binary code bit 4.
FO-085	STOP: BIN.5	Cabin position output – binary code bit 5.
FO-086	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 GRAY CODE TABLE
FO-087	STOP: GRAY.1	Cabin position output – gray code bit 1.
FO-088	STOP: GRAY.2	Cabin position output – gray code bit 2.
FO-089	STOP: GRAY.3	Cabin position output – gray code bit 3.
FO-090	STOP: GRAY.4	Cabin position output – gray code bit 4.
FO-091	STOP: GRAY.5	Cabin position output – gray code bit 5.
FO-092	TEST OUTPUT 1	Output function which is activated when input function FI-301 are activated.
FO-093	TEST OUTPUT 2	Output function which is activated when input function FI-302 are activated.
FO-094	RESET SAFEY CIR.	Output function for reset safety chain. Activate only if is EN81(A3) error present.

NO	DYSPLAY ON LC100-D	DESCRIPTION
FO-095	NUDGING DOOR A	Nudging output for door A.
FO-096	NUDGING DOOR B	Nudging output for door B.
FO-097	INIT RES. SAF.SPC	Output function for start safety procedure for inspection drive in case of low pit function (FI-308) didn't occurred before switched off power supply.
FO-098	ELEVATOR IN THE STATION	Forwarding information about Stopping UP & Stopping DOWN input.
FO-099	Empty cabin	Output function which is activated when cabin load is less then 40 kg.
FO-100	STOP=00	Function for the unknown position of the cabin.
FO-101	STOP=01	Function cabin at floor 1.
FO-102	STOP=02	Function cabin at floor 2.
FO-1xx	STOP=XX	Function cabin at floor XX.
FO-141	L 7-segment____A	7-segment display (left)
FO-142	L 7-segment____B	7-segment display (left)
FO-143	L 7-segment____C	7-segment display (left)
FO-144	L 7-segment____D	7-segment display (left)
FO-145	L 7-segment____E	7-segment display (left)
FO-146	L 7-segment____F	7-segment display (left)
FO-147	L 7-segment____G	7-segment display (left)
FO-148	R 7-segment____a	7-segment display (right)
FO-149	R 7-segment____b	7-segment display (right)
FO-150	R 7-segment____c	7-segment display (right)
FO-151	R 7-segment____d	7-segment display (right)
FO-152	R 7-segment____e	7-segment display (right)
FO-153	R 7-segment____f	7-segment display (right)
FO-154	R 7-segment____g	7-segment display (right)
FO-155	SAF.CIRC. BRIDGE	Output function, active when safety circuit are bridge.
FO-156	DRV W. BRIDGE-K	Output function, driving with bridged safety circuit, constantly signal.
FO-157	DRV W.BRIDGE-T	Output function, driving with bridged safety circuit, intermittent signal of=1Hz.
FO-158	TEST UPSa 1x/24h	Output function, UPS test (return information from FI-342).
FO-159	DOOR LOCK TEST	Output function for testing door locking.
FO-160	UCM ENABLE	Output function, when function FI-205 are active
FO-161	SHAFT LIGHT ON	Output function for turning ON shaft light.
FO-162	SHAFT LIGHT OFF	Output function for turning OFF shaft light.
FO-163	EMERGANCY LIGHT	Output function for turning on emergency light, detected by evacuation/LC100-VFD plate.
FO-164	OUT PUSH ALARM	Output function which is active when ihen function **FI-335** are activated.
FO-165	ENABLE BR.L. PIT	Output function which is activated when input function **FI-309** are activated.

FO-166	ELEVATOR ON REV.	Output function which is activated when input function **FI-201/FI-235** are activated.
FO-167	PAWL ORD.CLS	Output function for turning off PAWL device. Exclusion control input function **FI-357.**
FO-168	PAWL ORD.OPN	Output function for turning on PAWL device. Inclusion control input function **FI-358.**
FO-169	PAWL PUMP	Pump management (work parallel with function **FO-167** and **FO-168**)
FO-170	END OF DRIVING	Impulse output (500ms) function when elevator finish the drive and stop.
FO-171	ACTUATOR OPEN	Output function for turning on actuator. Inclusion control input function **FI-309**.
FO-172	ACTUATOR CLOSE	Output function for turning on actuator. Inclusion control input function **FI-362**.
FO-173	PRE-START	Output function are used for pre-start hydraulics (prohibition of the opening the valve in pre start).
FO-174	ACTIVE AMI	Output function for delay starting AMI device **(H-20 value time)**.
FO-175	CHARGING BATERY	Output function when elevator are in charging zone, when function **FI-367** is activated.
FO-176	OSG TEST	--
FO-177	SPEED < 0,3 m/s	Output function is active when speed of ANTS are lower than 0.3 m/s.
FO-178	SPEED < 2.5 m/s	Output function is active when speed of ANTS are lower than 2.5 m/s.
FO-179	MONT.DRIVE – D2	Output function is active when montage drive through the D2 terminal are enabled
FO-180	FIREMAN PROGRAM	Output function is active when the fireman program **FI-244** is activated.
FO-181	RESET PSU-02	Power reset output to the PSU02. Used in special projects.For more information, please contact technical support.
FO-182	RESET CAN2	When detecting a loss of external indicators, the system issues a power reset command. Typically, the +24 VDC supply to the indicators is interrupted to perform the reset. This parameter is used for special projects only. For more information, please contact technical support.

INPUT FUNCTIONS TABLE

NO	DYSPLAY ON LC100-D	DESCRIPTION
FI-201	Program recall	Input function for switching to recall program.
FI-202	Recall UP	Recall pushbutton up input function.
FI-203	Recall DOWN	Recall pushbutton down input function.
FI-204	Supply control	Input function for power supply phase loss relay control.
FI-205	Safety device ct	Input function for controling the safety circuit control device used for relevelling and preopening the doors.
FI-206	Short safety sp.	Input function for elevators with short safety space. After the input is once activated (input FI-206) elevator is blocked until reset button on the LC100-D2 is pressed or activation of input FI-327
FI-207	Evacuation	Input function for emergency passanger evacuation. After the input is active elevator begins evacuation acording to the parameter A-04
FI-208	Bimetal sensor	Input function for motor bimetal sensor. After the input is activated function motor fan FO-18 is switched on.
FI-209	Con. FAN control	Input for fan contactor control.
FI-210	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-07. After the elevator ends with the fire program it is blocked until input is switched off.
FI-211	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-08. After the elevator ends with the fire program it is blocked until input is switched off.
FI-212	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-09. After the elevator ends with the fire program it is blocked until input is switched off.
FI-213	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-17. After the elevator ends with the fire program it is blocked until input is switched off.
FI-214	Reset LC100-C	Reset input for LC100-C board.
FI-215	Out of order	Input for out of order status of the elevator.
FI-216	Input TIMEREL 1	Input function for time relay 1. Setting the time relay is explained in parameters type H
FI-217	Input TIMEREL 2	Input function for time relay 2. Setting the time relay is explained in parameters type H
FI-218	No landing calls	Input for disableing the landing calls.
FI-219	Montage drive	Input for activating montage drive.
FI-220	Con. UP contr.	Input for up travel contactor control.
FI-221	Con. DOWN contr.	Input for down travel contactor control.
FI-222	Con LS control	Input for low speed contactor control.
FI-223	Con HS control	Input for high speed contactor control.

NO	DYSPLAY ON LC100-D	DESCRIPTION
FI-224	Brake control	Input for brake control.
FI-225	Mot con. Control	Input for motor contactor control, used for frequency regulated elevators.
FI-226	Inverter control	Input for frequency regulator control.
FI-227	Con Y control	Input for star contactor control for hydraulics elevators.
FI-228	Con D control	Input for delta contactor control for hydraulics elevators.
FI-229	UPER LIMIT cont.	Input for upper final limit switch control. When the input is activated elevator is blocked until manual reset.
FI-230	Safety c. STOP	Safety circuit control input for STOP when LC100-S board not used.
FI-231	Safety c. LAND D	Safety circuit control input for LANDING DOOR when LC100-S board not used.
FI-232	Safety c. DOOR A	Safety circuit control input for DOOR A when LC100-S board not used.
FI-233	Safety c. DOOR B	Safety circuit control input for DOOR B when LC100-S board not used.
FI-234	Safety c. LOCK	Safety circuit control input for LANDING LOCK when LC100-S board not used.
FI-235	Service travel	Inspection drive input
FI-236	Service UP	Inspection drive up input function.
FI-237	Service DOWN	Inspection drive down input function.
FI-238	Empty car	Input to control the presence of the person in the elevator cabin.
FI-239	25% car load	Input for 25% load in the cabin.
FI-240	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.
FI-241	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.
FI-242	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.
FI-243	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.
FI-244	Fireman travel	Fireman travel input.
FI-245	Car light contr.	Cabin light control input function.
FI-246	Door inside cabin	Input for door inside the cabine.
FI-247	Car call hold	Function for holding the cabin calls for platform use.
FI-248	Brake release	Brake activation input when using manual evacuation A-04=2
FI-249	Service speed 2	Input for activating service speed 2.
FI-250	Reference UP 1	Input for upper reference switch for nominal speed.
FI-251	Reference UP 2	Input for upper reference switch for second nominal speed.
FI-252	Reference DOWN 1	Input for lower reference switch for nominal speed.
FI-253	Reference DOWN 2	Input for lower reference switch for second nominal speed.
FI-254	Counting UP	Counting input for up direction travel.
FI-255	Counting DOWN	Counting input for down direction travel.
FI-256	Stopping UP	Stopping switch input for up direction travel.
FI-257	Stopping DOWN	Stopping switch input for down direction travel.

NO	DYSPLAY ON LC100-D	DESCRIPTION
FI-258	Stopping zone	Input for stopping zone switch.
FI-259		
FI-260	Opening limit A	Opening limit switch input for door A
FI-261	Closing limit A	Closing limit switch input for door A
FI-262	Obstacle door A	Input for closing door obstacle side A
FI-263	Photocell door A	Input for photocell door A
FI-264	Open but.door A	Input for door A open pushbutton.
FI-265	Close but.door A	Input for door A close pushbutton.
FI-266	Slowing open A	Input for slowing the door A opening speed.
FI-267	Slowing close A	Input for slowing the door A closing speed.
FI-268	Open but.door A2	Additional input for door A open pushbutton.
FI-269	Close but.door A2	Additional input for door A close pushbutton.
FI-270	Opening limit B	Opening limit switch input for door B
FI-271	Closing limit B	Closing limit switch input for door B
FI-272	Obstacle door B	Input for closing door obstacle side B
FI-273	Photocell door B	Input for photocell door B
FI-274	Open but.door B	Input for door B open pushbutton.
FI-275	Close but.door B	Input for door B close pushbutton.
FI-276	Slowing open B	Input for slowing the door B opening speed.
FI-277	Slowing close B	Input for slowing the door B closing speed.
FI-278	Open but.door B2	Additional input for door B open pushbutton.
FI-279	Close but.door B2	Additional input for door B close pushbutton.
FI-280	Photocell do. A2	Additional input for photocell door A
FI-281	Photocell do. B2	Additional input for photocell door B
FI-282	Auto call 1-2	Input for automatic call from floor 1 to floor 2 for car elevators.
FI-283	Auto call 2-1	Input for automatic call from floor 2 to floor 1 for car elevators.
FI-284	Auto call 1-3	Input for automatic call from floor 1 to floor 3 for car elevators.
FI-285	Auto call 3-1	Input for automatic call from floor 3 to floor 1 for car elevators.
FI-286	Auto call 2-3	Input for automatic call from floor 2 to floor 3 for car elevators.
FI-287	Auto call 3-2	Input for automatic call from floor 3 to floor 2 for car elevators.
FI-288	Sig. RDY NGV(A3)	Input control for READY relay from NGV agregat.
FI-289	Sig. RUN NGV(A3)	Input control for RUN relay from NGV agregat.
FI-290	Oversrd.gov.(A3)	Overspeed governor coil control input or for control AMI safety device. **For enable work with AMI device (H-20 > 0).**
FI-291	Saf.cir.gov.(A3)	Overspeed contact control input.
FI-292	Ctr.con.gov.(A3)	Overspeed contactor control input / AMI contact control input.

NO	DYSPLAY ON LC100-D	DESCRIPTION
FI-293	Short safety sr2	Aditional input function for elevator with short pitt . After input FI-293 is active elevator is blocked until reset on the LC100-D keypad or activating FI-372. Function is identical as function FI-206.
FI-294	Open but.d. A+B	Input for open door button for both cabin doors „A“ and „B“
FI-295	Close but.d. A+B	Input for close door button for both cabin doors „A“ and „B“
FI-296	Disable call	Input function for disabeling the calls defined by the parameter B-17.
FI-297	Phase L1 (R)	Input for power supply control phase „R“
FI-298	Phase L2 (S)	Input for power supply control phase „S“
FI-299	Phase L3 (T)	Input for power supply control phase „T“
FI-300	Ctr. NCUM10 (A3)	Input for controlling the UMD safety device.
FI-301	Test input 1	Input function for activating output function FO-92.
FI-302	Test input 2	Input function for activating output function FO-93.
FI-303	Earthquake pro.	Input function for earthquake program. Elevator stops in the nearest floor and stays with the open doors until input is deactivated.
FI-304	Spd.stp >0.1 m/s	Input for leveling speed control.
FI-305	Evak. door A	Input function for door A opening in case of automatic evacuation.
FI-306	Evak. door B	Input function for door B opening in case of automatic evacuation.
FI-307	Program lift boy	Input for activating the lift boy program.
FI-308	Landing door N1	Input for control of the landing door contact for the first floor door, used in elevators with the short pit space.
FI-309	Pillion in shaft	Input for control of the pillion in the pit, used in elevators with the short pit space also function to allow revision drive at the same time is the final open contact of the actuator.
FI-310	Valve down A3	Input for controlling the aditional valve for down drive.
FI-311	UPS control	Input for control of the UPS..
FI-312	Test NORM 2454-2	Input for active function for testing norme 2454-2.
FI-313	I-valve control	Input for control of the Bucher I-Valve. ***condition for enable I-valve mode are parameters C-22 or C-23 <> #0***
FI-314	Landing d. N=1	Input for control of the landing door contact for the first floor.
FI-315	Landing d. N=2	Input for control of the landing door contact for the second floor.
…	…	…
FI-325	Landing d. N=12	Input for control of the landing door contact for the twelfth floor.
FI-326	Request for rev.	Input for activating automatically entrance on the cabin roof for service drive.
FI-327	Reset small pit	Input for reset small pit status.
FI-328	Service from pit	Inspection drive from the pit input.
FI-329	Service pit UP	Inspection drive from the pit, up input function.
FI-330	Service pit DOWN	Inspection drive from the pit, down input function.
FI-331	Limit ser.2m UP	Input for limit service switch UP 2 meters beffore station.
FI-332	Limit ser.2m DOW	Input for limit service switch DOWN 2m meters beffore station.

FI-333	Safe.circ. bridge	Input for control bridging safety chain.
NO	DYSPLAY ON LC100-D	DESCRIPTION
FI-334	Shaft light	Shaft light control input function.
FI-335	Pushbutton ALARM	Information input Alarm button is pressed.
FI-336	Err light curt.A	Control input for light curtain of door A.
FI-337	Err light curt.B	Control input for light curtain of door B.
FI-338	Temperature do.A	Control input for temperature of door A.
FI-339	Temperature do.B	Control input for temperature of door B.
FI-340	Imp.for hold d.A	Input for door A open pushbutton – additional time.
FI-341	Imp.for hold d.B	Input for door B open pushbutton – additional time.
FI-342	Test UPS 1x/24h	Input for control of the UPS, once a day.
FI-343	Service pit door	Input for control service pit door. Writes in statistic, for normal travel need to do reset.
FI-344	Safety gear	Input for control safety gear. Writes in statistic, for normal travel need to do reset.
FI-345	STOP in control	Input information that the STOP on the cabinet is activated.
FI-346	STOP on cabine	Input information that the STOP on the cabin is activated.
FI-347	STOP by machine	Input information that the STOP near machine is activated.
FI-348	STOP in the pit	Input information that the STOP in the pit is activated.
FI-349	Cont.cont UP/2	Additional input for UP travel contactor control for hydraulic elevators.
FI-350	Cont.cont DOWN/2	Additional input for DOWN travel contactor control for hydraulic elevators.
FI-351	Cont.mot.cont./2	Additional input for control motor contactots for VVVF elevators.
FI-352	Brake control./2	Additional input for brake control for VVVF elevators.
FI-353	Reset LC100-C/2	Additional input for reset error/controller.
FI-354	Reset small p./2	Additional input for reset small pit status.
FI-355	Cont.con.K-EUCM	Input for controlling the EUCM contactor.
FI-356	Cont.valve block	Input for controlling hydraulic valve block.
FI-357	Lock. dev. close	Input for controlling a seating device (PAWL device) reentrant, enable drive.
FI-358	Lock. dev. open	Input for controlling a seating device (PAWL device) pulled out, seating is enable.
FI-359	Preasure 0 ctr.	Input for controlling of preasure, if preasure are 0, then input will be active (the cabin was seated).
FI-360	A3 valve ctr Se1	Input functions for hydraulic GMV, signal Se1 (max delay 0.5 sec after finished drive)
FI-361	A3 valve ctr Se2	Input functions for hydraulic GMV, signal Se2 (max delay 0.5 sec after finished drive)
FI-362	Norm.pos.actuat.	Input function for enable automatic drive also the final contact for closing the actuator.
FI-363	Dbg test input	Input function for debugging. When function active, directory write to memory of statistic.
FI-364	Enable XE3 on E0	Activating of function, system look LC100-E4 card, connector XE3 like enable bit for access control on LC100-E0, XE3. *For example when input on (E4).XE3.3 are active then (E0).XE3.3 look the input*. This function need to be set on one free input with polarity NC to be active functionality.

FI-365	Enable XE3 on E1	Activating of function, system look LC100-E4 card, connector XE3 like enable bit for access control on LC100-E1, XE3. *For example when input on (E5).XE3.3 are active then (E1).XE3.3 look the input*. This function need to be set on one free input with polarity NC to be active functionality.
FI-366	AMI normal drive	AMI indented for normal travel.
FI-367	Chars.bat.posit.	Enable function for allowing to turn on the charging output **(FO-175)**.
FI-368	Low batery	Enable function for enable charging output. It is not used for now.
FI-369	Fireman enable	Enable function for permit fireman travel program.
FI-370	Pictogram-yellow	Input function to enable information about yellow pictogram symbol on the display.
FI-371	Pictrogram-green	Input function to enable information about green pictogram symbol on the display.
FI-372	Overspd.g.2 (A3)	Additional overspeed governor coil control input. It works in parallel with the **FI-290** function. Functions **FI-290** and **FI-372** must be active for switching on, as well as for switching off control.
FI-373	LIMAX 1M refer.	It is used when employing the LIMAX 1M model to determine the first floor zone.

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)

Adress of P, M or L modul
A – 00 Cabin modul A side.
A – xx Landing modul A side in xx floor.
B – 00 Cabin modul B side.
B – xx Landing modul B side in xx floor.

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

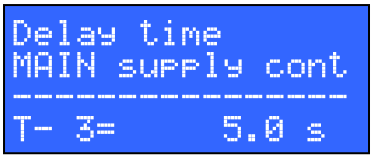
T-01	Standard	1-3

Parameter for choosing the standard for software.
1 – **EN81** standard
2 – Russian standard (firefighter mode)
When in firefigihter mode open cabin doors, elevator stay with opened doors until new call. Closing door is possible with holding door close button, until door is not full closed if holding is interrupt, door's automatically reopening.
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 FI-226.

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 FO-019. It is used for frequency regulated elevators with evacuation. When the control cabinet is powered if the input for evacuation FI-207 is not active output for main supply contactor (FO-019) is switched on with delay T-03. If the input FI-207 is active then output for UPS contactor (FO-020) is switched on with delayT-04.

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 FO-020. It is used for frequency regulated elevators with evacuation. When the control cabinet is powered if the input for evacuation FI-207 is not active output for main supply contactor (FO-019) is switched on with delay T-03. If the input FI-207 is active then output for UPS contactor (FO-020) is switched on with delayT-04.

T-05	Time for start motor conntactors	0-2s

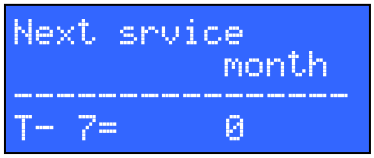
Working time for the motor start function (FO-08).

T-06	Next service DAY	0-31

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.

4/6 Parameters	12/12 Factory	Type T

T-07	Next service MONTH	0-12



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

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

Monitoring type (filtering the parameters):
0 – on parameter filtering is switched off.
1 – off parameter filtering is switched on.

When the filtering is switched off all parameters of the system are visible through the LC100-D terminal.

When the filter is „on“ parameters and functions are visible according to each other. If some parameters are not reacheable that means the filter is „on“.

Example 1: 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).

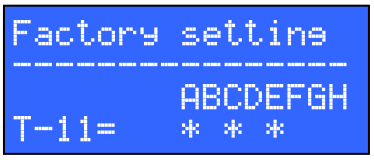
Example 2: If the parameter „Cabin door“ is set to D-01=1 (one automatic door). Then all parameters for door A are visible and parameters for door B are hidden.

Example 3: 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.

T-10		0-99

A - Copying with pulses 4/5 when processing is taken over by the C board. The dividers and the pulse direction remain functional and the division is performed by the C board, After changing the divider / pulse direction (parameter T-16 settings), a new learning run is automatically started (E-16 is set to 0)
B - Extraction to adjacent station for all copy types except type 6 with Landing speed regardless of which station is closer.
C - In TEST mode 1/15 (ASSEMBLY DRIVING), it is possible to drive up / down with the buttons on the D2 terminal. If the feedback control input (201) is set, driving is also possible with the buttons on D2 in that menu. If input 201 'feedback control' is not set, feedback control mode is automatically activated. When generating a driving order with the buttons on D2, function 179 - 'ASSEMBLY DRIVE with D2'. The functionality is not possible if a service drive that has priority is activated.
D - Additional filter when receiving a message from ADL - the message is valid after 2 consecutive same messages.

T-11	Factory setting

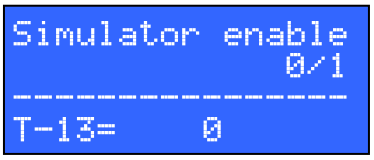


A – Close button priority off
B – Automatic reset EN81 error and give output FO-79 - after service travel
C – Deactivating phase control from LC100- plate
D – Weight scale deactivating
E – Enable next service day control (The year must be greater than 2022.)
F –
G – Enable recall drive until arrival reference switch.
H – Enable releveling when elevator is overloaded.

T-12	Output tables bin/gray codes

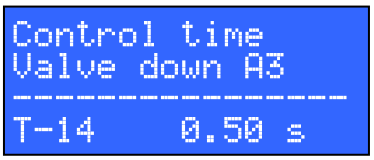
Output table selection for the display;
Bin=0 – first station start with binary 0001
Bin=1 – first station start with binary 0000
Gry=1 – standardy gray code output
Gry=2 – shifted gray code output *(Turkey market)*

T-13	Simulator enable	0/1



Enable possibility to show simulator mode in LC100 menu.

T-14	Control times valve down A3	0-2,50 s



On startup, the output function of the FO-25 (Test impulse A3), waits value of T-14 parameter, and checks if the elevator has fallen from the station switch, after that turn on valve down if everything are ok. Come to station, turn off FO-25 and waiting for the T-14 time to turn off down direction (FO-2). On this way controller check correctness of valves.

T-15	Delay on order direction ALGI	0-2,50 s

Start delay in up direction for hydraulic elevator VVVF – typ C.

T-16	ADL config	

A – Drive direction *(not selected – normal, selected – inverted)*
B – Impulse direction *(not selected – normal, selected – inverted)*
C – Reset by CAN enable/disable *(not selected – enable, selected – disable)*
D – Contactor status signal transfer from ADL by CAN *(not selected – enable, selected – disable)*
E – Brake status signal transfer from ADL by CAN *(not selected – enable, selected – disable)*
F – ADL ready signal transfer from ADL by CAN *(not selected – enable, selected – disable)*

G H		Positioning system by encoder on ADL enable with resolution 1 Impulses = impulses / 1
G H	*	Positioning system by encoder on ADL enable with resolution 2 impulses = impulses / 2
G H	* 	Positioning system by encoder on ADL enable with resolution 3 impulses = impulses / 4
G H	* *	Positioning system by encoder on ADL disable (another source of impulses in use)

T-17	Stp NORM 2454-2	0-40

After activation of input FI-312 elevator reach the station which is defined with parameter **T-17**, without opening the doors, descent automatically elevator for lenght which is define by parameter T-18, open the doors and waiting with opened doors until deactivated input FI-312, then start normal travel.

While the function FI-312 is activated, elevator don't accept landing and cabin calls.

T-18	Drv NORM 2454-2 * 100ms / *10mm	0-100

Defining times / descent time in the zone test.
(For the absolute possitioning type - descent is T-18 x 10 mm)
(For other positioning type – descent length was determined by the T-18 x 100 ms)

T-19	LC100-VFD configuration	

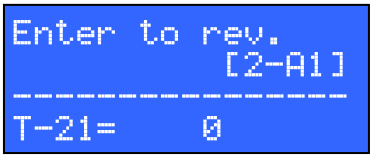
A – enable phase control through LC100-VFD card
B **–** enable evacuation detection through LC100-VFD card (only in combination with selected letter A)
C – ADL300 enable control *(Digital input E mon)* – error 185 *(Enable ADL open)*
D – enable – function using the fast input on XC7.1.
Once the signal is activated, it must be present at all times. The LC100 detects a fault on the negative edge of the signal, stops the drive and reports error 186 (Fast stop active).
Functionality can work for any VVVF drive type.
E – **Reserved**
F – **Reserved**
G – **Reserved**
H – enable debugging messages of utility statistic – expert user

In firmware 4.409.00 or newer.

T-20	Factroy settings	

A – ***not selected*** **–** Cabin door will be open in the fire station when fire program are active.
selected – Cabin door will close automatically after time (which is defined by parameter **B-20**), in the fire station when fire programs are active.
B – ***not selected*** –
selected –
C – Enable service until arrival stopping zone.
D – ***not selected*** – First travel after service travel must be confirmed with call
selected – If cabin is in the station, cabin door will open after service travel
E – ***not selected*** – without UCM status reset after service travel
selected – UCM status reset on service drive button
F – ***not selected*** – UCM status reset for automatic drive on landing/cabin call if elevator is out of station with closed door.
selected – If cabin is in the station, cabin door will open after service travel
G – **not selected –** retairing cam output (***FO-048***) active when cabin door are full opened
selected – *retairing cam output (**FO-048**) active when cabin doors go to opening*
H – ***not selected*** – Enable reset with button or terminal.
selected – Disable reset with button or terminal.

T-21	Enterence to service drive	0-255

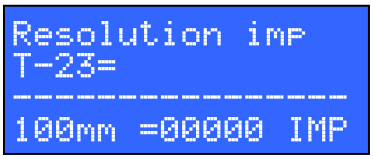


When function service travel enterance are active (FI-326), elevator came to seted station and start drive with low speed

T-22	Distance to service drive	0-250

Descent time/space for entering on cabin roof (service travel).
T-21 station bellow T-22 time/space.

T-23	Impulses to mm	0-99999



Defining how many impulses is 100 mm.
When parameter is present, then all other menus for positioning are showed in mm.

T-24	Password 1	0-9999

Set protection password level 1 for locking menu.
If password is seted, on system booting must be entered password.
If you don't use keypad more then 10 min. system is automatically locked, to disable password put factory value 0000.

T-25	Password 2	0-9999

Set protection password level 2 for locking menu.
If password is seted, on system booting must be entered password.
If you don't use keypad more then 10 min. system is automatically locked, to disable password put factory value 0000.

T-26	Next service date (2)	day-month-year

Function is used for elevators with surveillance system to keep track for servicing the elevators.

T-27	Password 3 (3+SMS)	0-9999

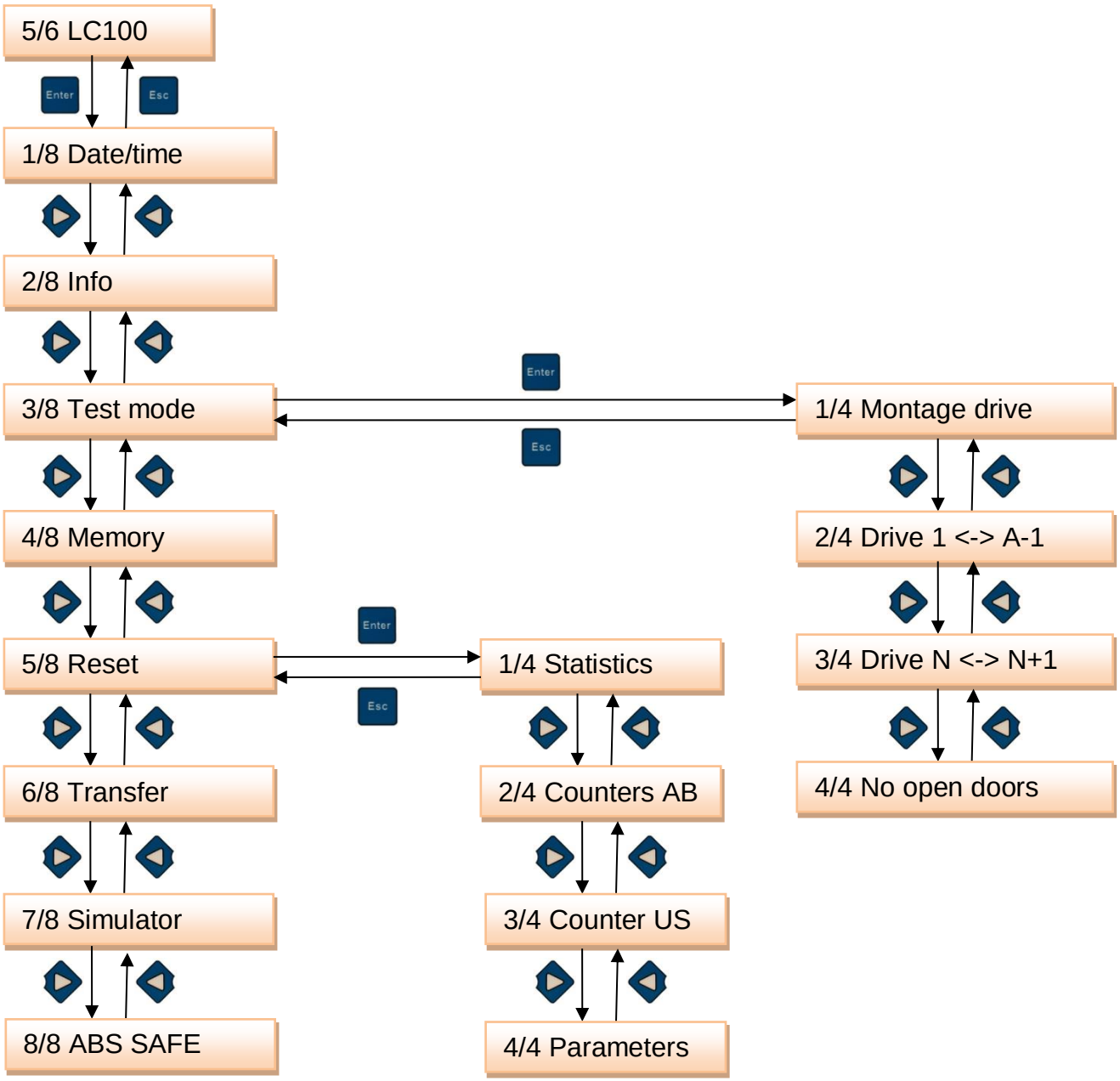
Set protection password level 3 for locking menu.
If password is seted, on system booting must be entered password.
If you don't use keypad more then 10 min. system is automatically locked, to disable password put factory value 0000.

T-28	Password 3 (3+SMS)	day-month-year

Function is used for elevators with surveillance system to keep track for servicing the elevators.

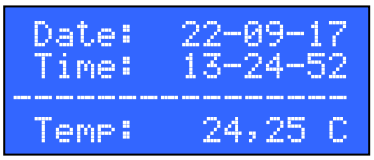
5. LC100 menu

LC100 menu has 7 submenus like shown on the picture:



5.1 Date/time

5/6 LC100	1/9 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	2/9 Info

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

5.3 Test mode

5/6 LC100	3/9 Test mode

For elevator testing there is possible to change the 4 drive modes:

1/15 Montage drive – Switches on the montage drive.

Montage drive presents driving the elevator without the cabin connection box (only with the contol 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.

Switching off the montage drive is always when power down the LC100-C board. Also montage drive is switched automaticly after there is communicaton with the cabin board (connecting the LC100_K board to CAN communication bus).

It is possible to switch the montage drive through the digital input.

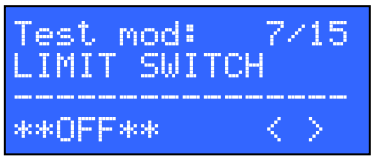
2/15 Drive 1 <-> A-1 – Switches on the automatic drive only to first and the last floors.

3/15 Drive N <-> N+1 – Switches on the automatic drive with floor to floor drive. Elevator drives only one floor at a time..

4/15 NO OPEN doors – Switches on the automatic drive without the door managing function. Elevator is working normally but the doors are not opened.

5/15 EN81+A3 UP – 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 relevelling 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.

6/15 EN81+A3 DOWN – Identical as the test UP but in down direction.

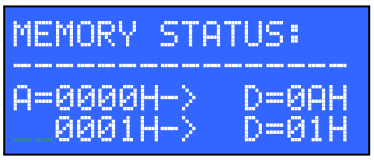


7/15 LIMIT SWTICH – When test limit switch are active, when controller have cabin call to last station (up or down), elevator will go to this station and with stopping speed they will pass stoping sensors and go to limit switch.

8/15 LEVELING ADJ –

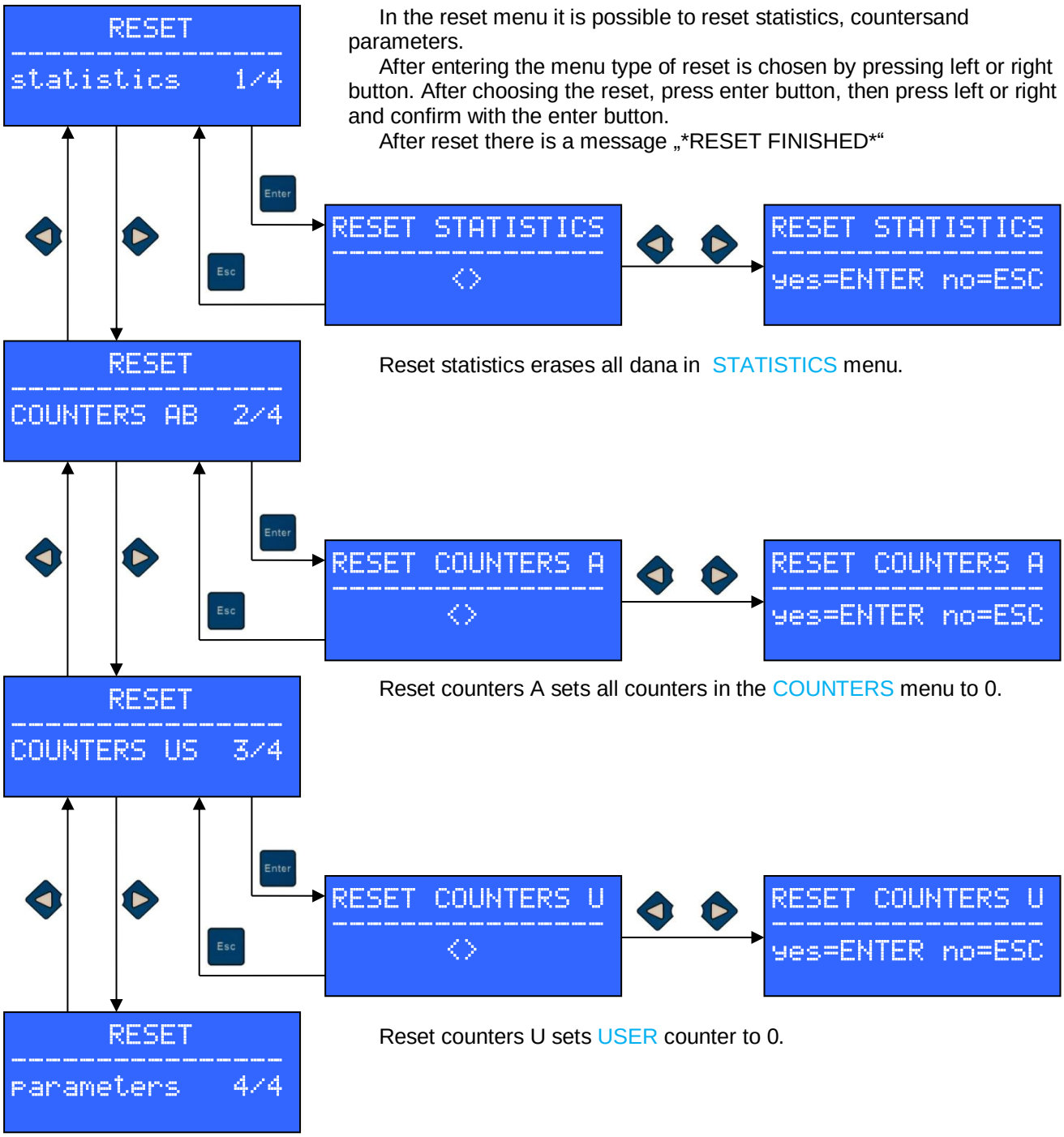
9/15 RE-LEVELING ADJ –

5.4 Memory

5/6 LC100	4/9 Memory
	Factory parameter for monitoring the values of internal memory.

5.5 Reset

5/6 LC100	5/9 Reset



In the reset menu it is possible to reset statistics, countersand 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 erases all dana in STATISTICS menu.

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

Reset counters U sets USER counter to 0.

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.

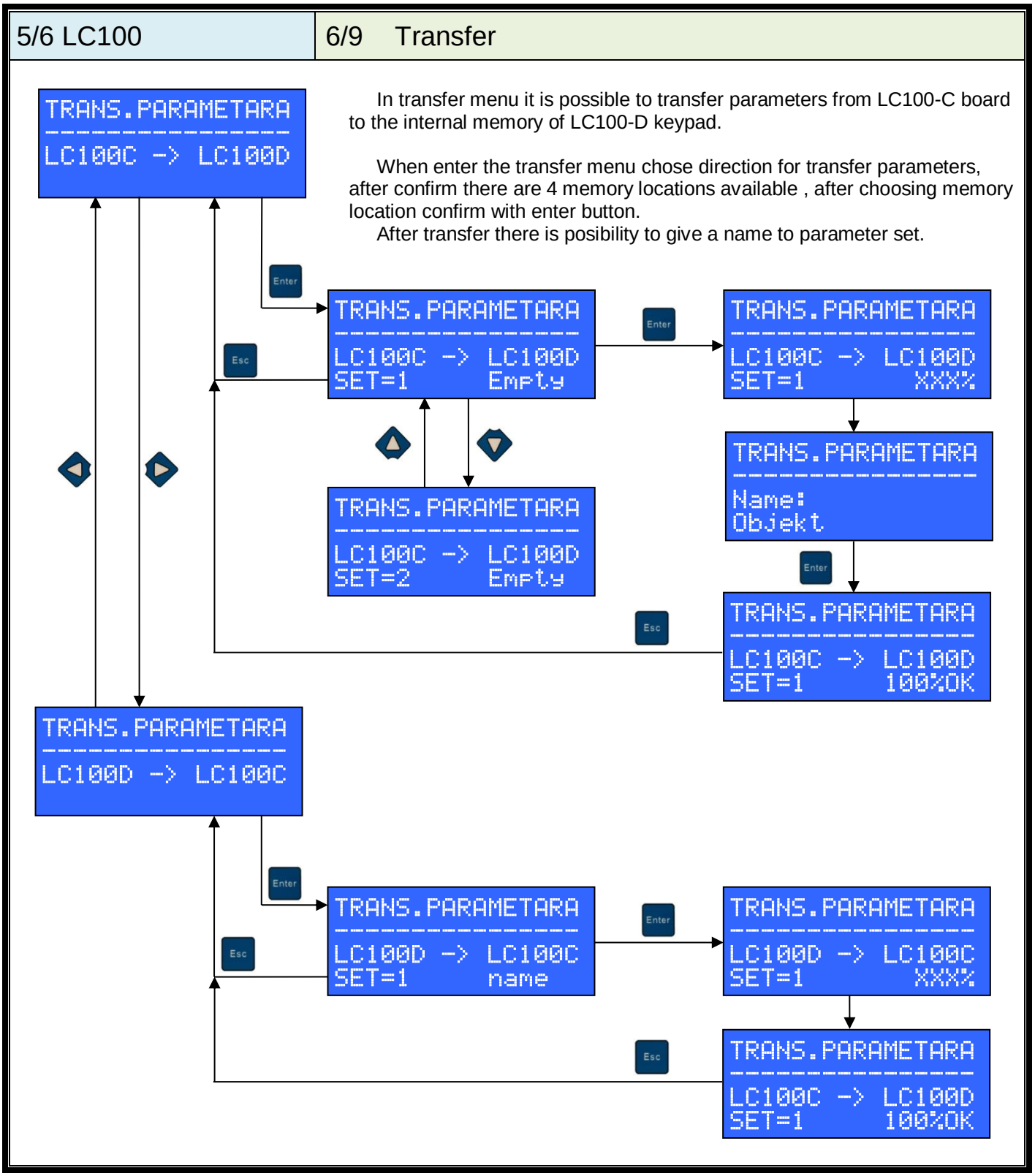
After choosing the set confirm with enter button and message „*RESET FINISHED*“ appears.

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

5/6 LC100	6/9 Transfer



5/6 LC100	6/9 TRANSFER

In transfer menu it is possible to transfer parameters from LC100-C board to the internal memory of LC100-D keypad.

When enter the transfer menu chose direction for transfer parameters, after confirm there are 4 memory locations available , after choosing memory location confirm with enter button.

After transfer there is posibility to give a name to parameter set.

5/6 LC100	7/9 SIMULATOR

Simulator are used for testing software/hardware without connection boards to positioning, doors…it simulates all input what is needed for the normal functioning of elevator.

To enable simulator, must be set T-13=1 or T-13=2 *(if is used simulation of absolute position system, with making a correction on current position with buttons on LC100 terminal)*.

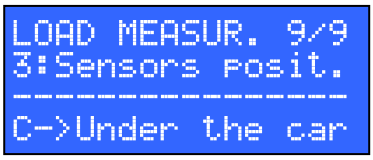
5/6 LC100	8/9 SIMULATOR

Description of this menu you can find in APPENDIX 4: ANTS SAFE PROCEDURE.

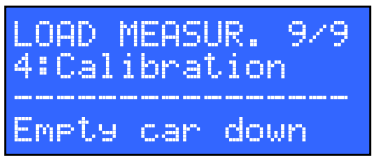
5/6 LC100	9/9 LOAD MEASUR.

Load measurement menu are for weight measurement calibration.
Calibration is done by the down next steps.

1. Set the car nominal load and capacity using the LC100 menu **LC100->LOAD MEASUR.->CAPACITY**



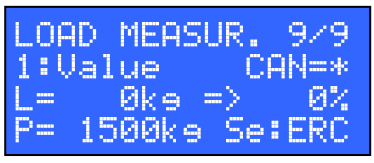
2.Select the location of the weight sensors using the LC100 menu
LC100->LOAD MEASUR.->3:Sensors posit.
R->On the ropes
C->Under the car



3.Bring the lift to the lowest floor, with car fully installed and empty and set the zero-point using the LC100 menu
LC100->LOAD MEASUR.->3:Calibration (Empty car down option).

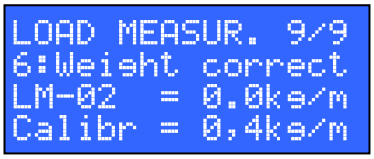
3.1 Put a familiar load in the car and calibrate using the LC100 menu
LC100->LOAD MEASUR.->4:Calibration (Load option)

3.2 If the load measuring sensors are located on the rope ends, send the empty car to the highest landing and set the upper zero-poin using the LC100 menu: **LC100->LOAD MEASUR.->Calibration (Empty car up option)**



INFO: When the system is fully set up, the information menu
LC100-LOAD MEASUR.->1:Value will contain follow information:
L= measured car load in kg and percentage of rated load
P= measured load on the sensors
CAN=* signalises that the communication with sensors is working, if it is not it will show the “?” symbol
Se: status of the calibration:
E – empty car down calibration has been done,
R – known load calibration has been done,
C – empty car up calibration has been done

INFO:



INFO:

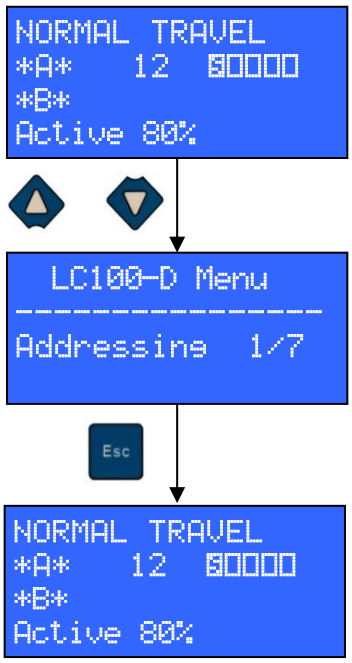
ADC GAIN: Increase sensor sensibility for higher loads.

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:

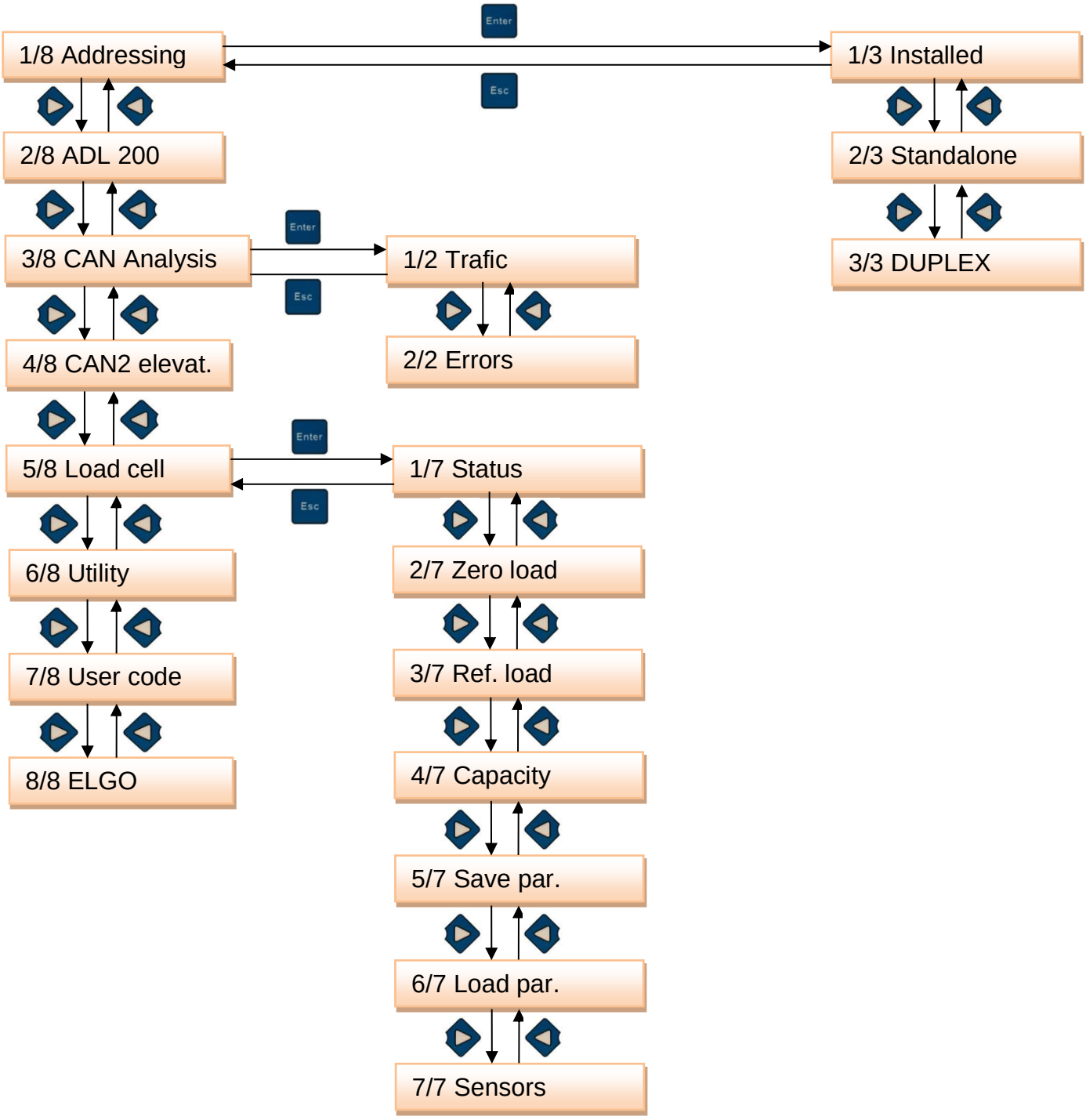
- LC100-M5, LC100-M6 and LC100-M7 module addressing
- CAN bus traffic analysis
- Elevator selection (if LC100-D is connected to CAN2 bus)
- Load sensor calibration and settings

LC100-D Additional menu	
	LC100-D additional menu can be accessed by pressing UP and DOWN keys simultaneously. Keys don't have to be pressed at the exactly same moment, it's sufficient that both are held pressed at the same time. To return from the additional menu, press ESC. Upon exiting from additional menu, LC100-D returns to the state it was in before entering.

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.

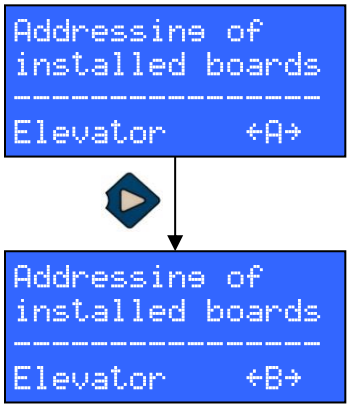
6.2 Aditional menu structure



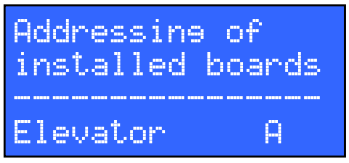
6.3 LC100-M5/M6/M7 addressing

1/8 Addressing	1/2 Installed

Multiple elevators



Single elevator



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.

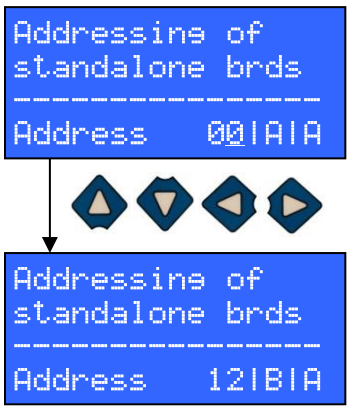
If there are multiple elevators connected to the CAN2 bus, LC100-D will draw arrows next to selected elevator designator, indicating that it's possible to select other elevators using LEFT and RIGHT keys. If there is only one elevator, no arrows will be drawn.

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.

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).

After exiting the menu all of the signalization modules will save their assigned addresses, so no further action from the user is required.

1/8 Addressing	2/2 Standalone



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.

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).

Image on the left shows LC100-D screen when stop 12, elevator B and landing door A is selected.

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 200/300 parameters

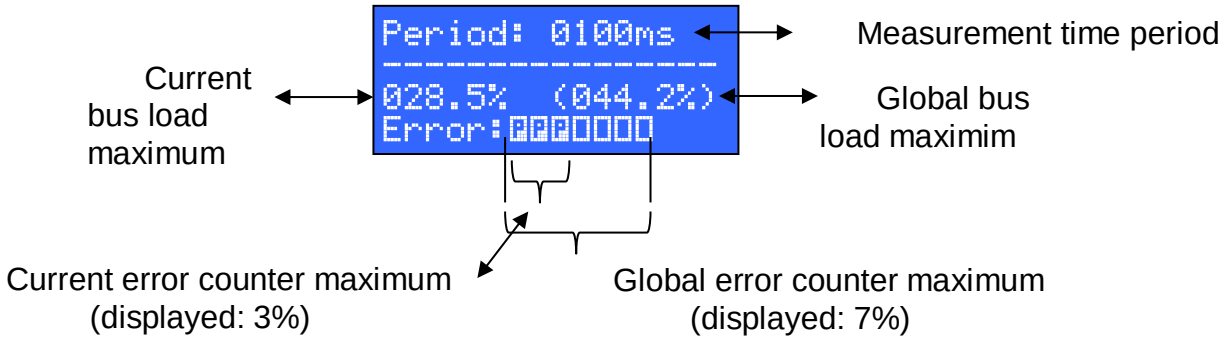
2/8 ADL200	ADL parameters

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

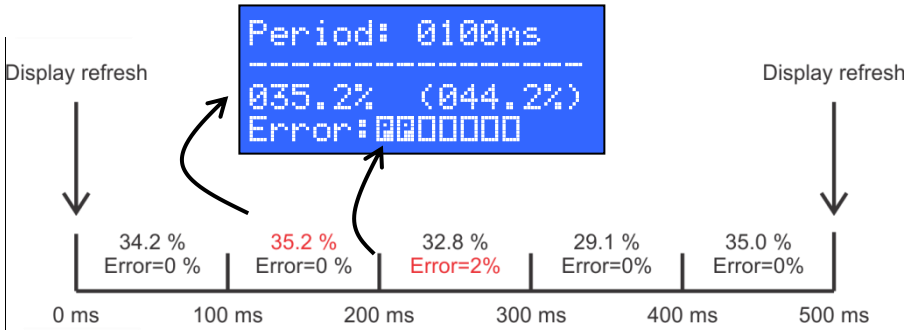
Parameter description are given in ADL200/300 user manual.

6.5 CAN bus traffic analysis

3/8 CAN Analysis	1/2 Traffic

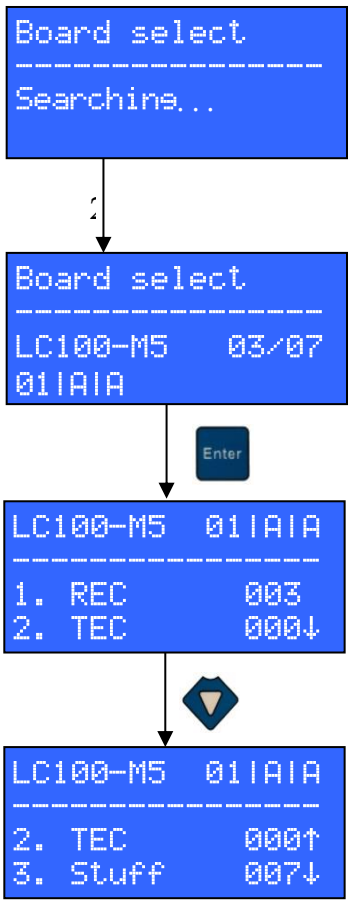


- Traffic analysis menu displays CAN bus load and transfer error number.
- Two types of data are displayed: global and current.
- **Current data** are refreshed every 500ms.
- **Global data** are updated only when a current value is bigger than an existing global value. **Global data can be reset by 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



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:

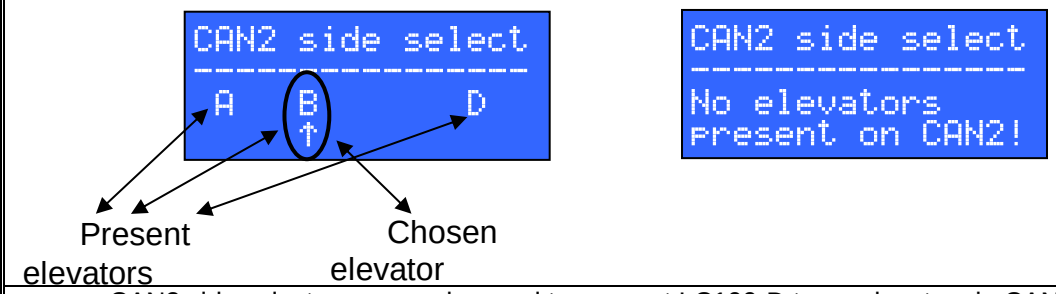
1. REC – CANREC
2. TEC – CANTEC
3. Stuff – bit stuffing error counter
4. Form – form error counter
5. Ack – ACK error counter
6. Bit – bit error counter
7. CRC – CRC error counter

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	

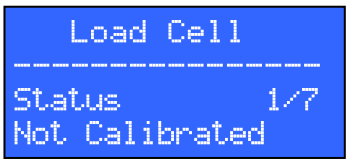


- CAN2 side select menu can be used to connect LC100-D to an elevator via CAN2 bus.
- Menu shows elevators present on the CAN2 bus in real time
- If there are no elevators connected to the CAN2 bus message like the one on the right picture is displayed.
- Elevator can be selected by pressing LEFT and 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.

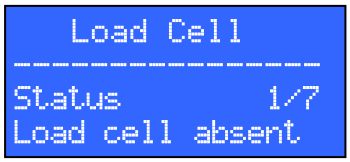
6.7 Load measurement

5/8 Load cell — 1/7 State

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



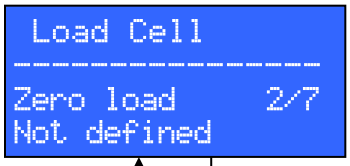
If load measurement system isn't calibrated, message "Not Calibrated" is displayed.



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

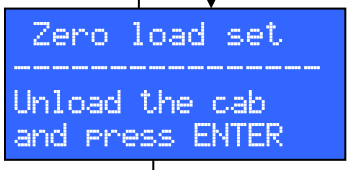
- Module LC100-V isn't connected to LC100-K
- Module LC100-V faulty
- Module LC100-K isn't connected to the elevator
- Module LC100-K faulty

5/8 Load cell — 2/7 Zero load



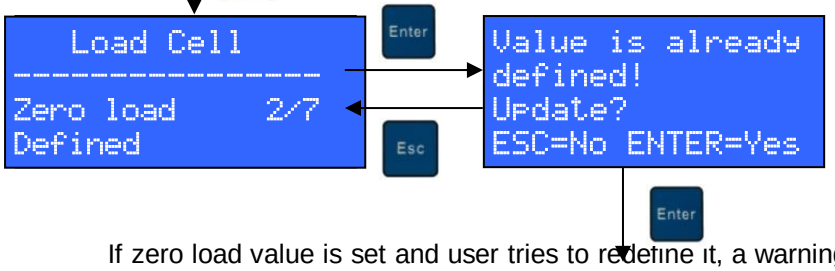
Zero load menu is used to calibrate load measuring system to an empty cab. If zero load calibration is not already done, "Not defined" message is displayed. Zero load calibration procedure can be started by pressing ENTER key.

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



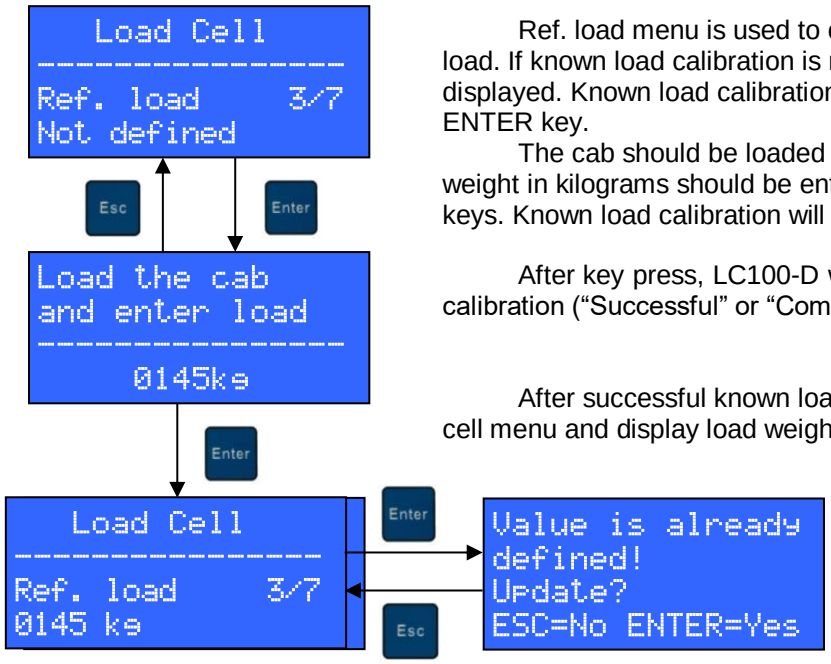
After key press, LC100-D will display the outcome of the zero load calibration ("Successful" or "Communication error").

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



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.

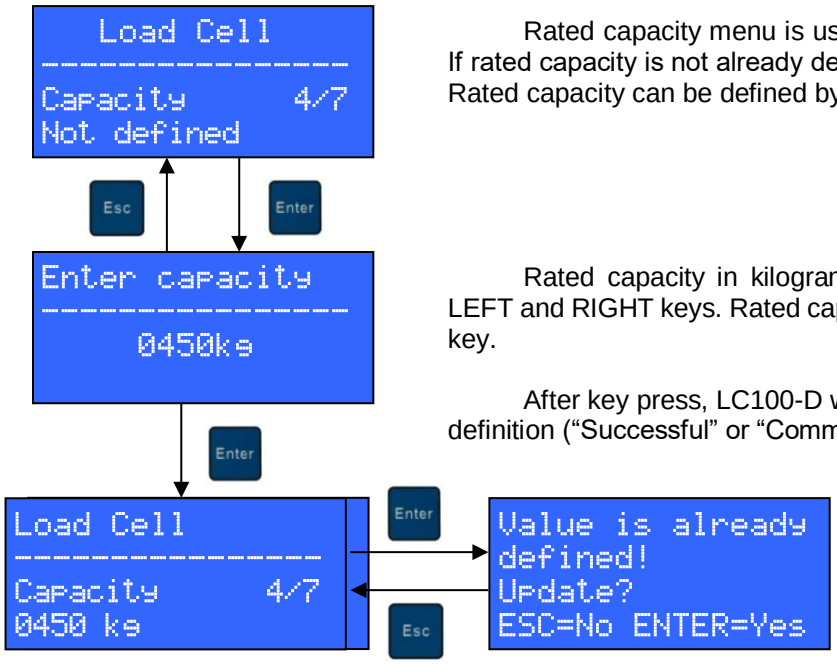
The cab should be loaded uniformly with a known weight now. Load weight in kilograms should be entered using UP, DOWN, LEFT and RIGHT keys. Known load calibration will commence upon pressing the ENTER key.

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



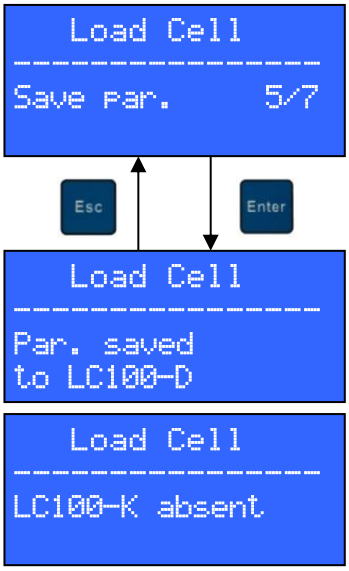
Rated capacity menu is used to define rated capacity of an elevator. If rated capacity is not already defines, “Not defined” message is displayed. Rated capacity can be defined by pressing the ENTER key.

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.

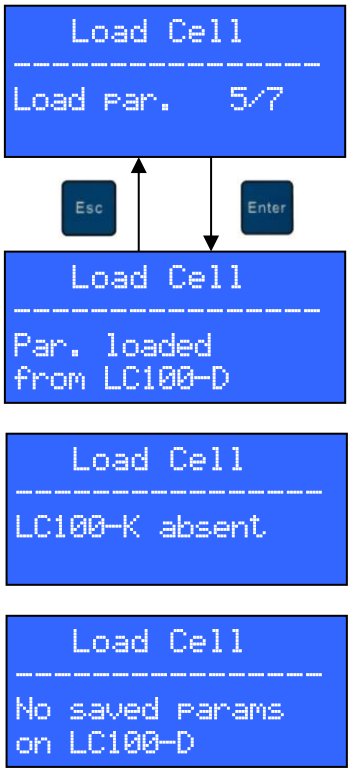


"Save parameters" and "Load parameters" menus can be used to temporarily store load measurement system parameters on the LC100-D and restore them at a later time, if LC100-K module has to be replaced (similar to "Parameter transfer from LC100-C to LC100-D"). There is no need to save parameters to LC100-D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



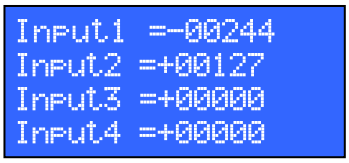
"Save parameters" and "Load parameters" menus can be used to temporarily store load measurement system parameters on the LC100-D and restore them at a later time, if LC100-K module has to be replaced (similar to "Parameter transfer from LC100-C to LC100-D"). There is no need to save parameters to LC100-D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

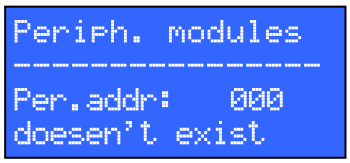
5/8 Load cell	7/7 Sensors



"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	



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 ABS POSITION SYSTEM

8/8 ELGO	

ABS 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.

Acording to the configuration, type of elevator (electric, hydraulic) and speed of the elevator there are 5 types of posittioning sistem which is set through parameter E-01.

With any type of posittioning 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 possitioning 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 bistabiles are used for final floors, and monostabile 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 ½ of the floor to floor distance.

Two bistabiles are used for final floors, one monostabile switch for stopping in the floor, and two monostabiles 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 ½ of the floor to floor distance.

Two bistabiles are used for final floors, one monostabile switch for stopping in the floor and one bistabile 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 guvernor or frequency inverter with close loop connected to CAN.

Two bistabiles are used for final floors, one monostabile switch for stopping in the floor or optical sensor, and inductive switch on the overspeed guvernor. 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 froom floor to floor there is not enough space to accelerate to nominal speed before slowing down. In that case possitioning 5 is used and the speed between two floors is lower than nominal speed of the elevator.

Two bistabiles are used for final floors for high speed, and two bistabiles for lower speed, one monostabile switch for stopping in the floor and inductive switch on the overspeed guvernor.

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 driveing two or more floors speed is nominal.

Positioning type 6:

It is used for absolute positioning system.

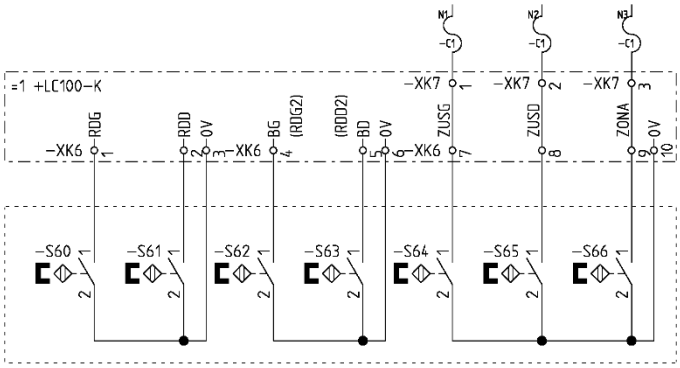
Benefits of absolute positioning system are smooth drive curve and increased positioning accuracy, better releveling, door preopening and also include optional system without mechanical limit switches and prelimit switches.

Table of switches acording 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.		
E01=6									
D28=1 or C18=1, 2	Connect switches acording to the positioning type +							MON/OPT	MON/OPT

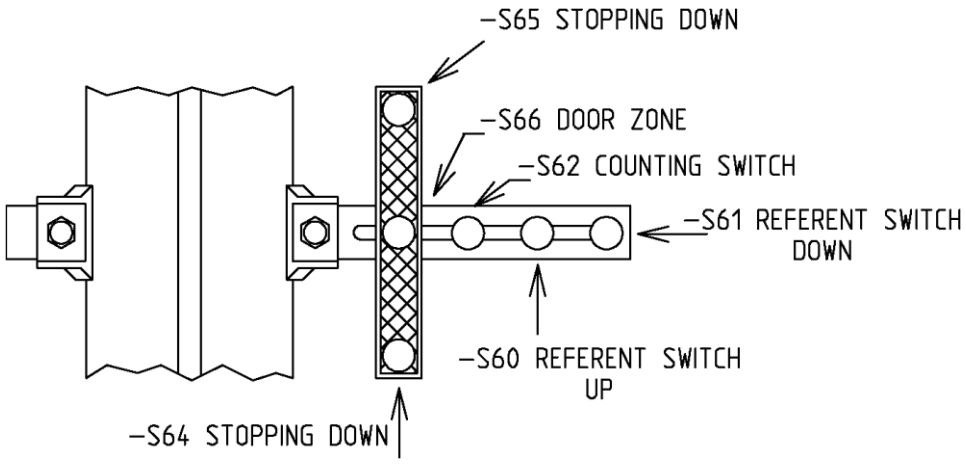
E-01=positioning type
D-28=preopening the doors
C-18=relevelling
BIST.=bistabile magnetic switch
MON=monostabil magnetic switch (NO or NC)
OPT=optical sensor

Conecting the positioning switches:

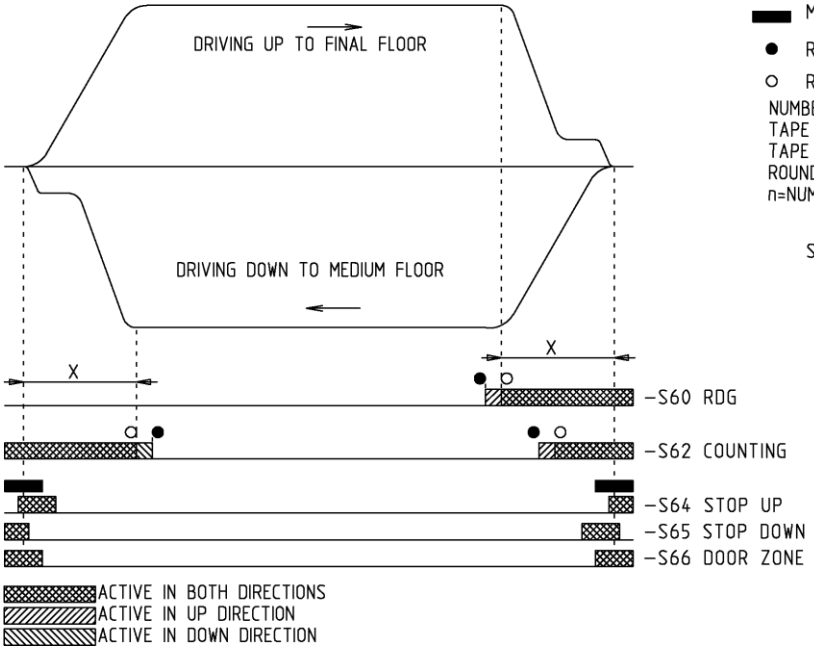


-S60 UPPER REFERENCE SWITCH
-S61 LOWER REFERENCE SWITCH
-S62 COUNTING UP OR UPPER REFERENCE SWITCH 2
-S63 COUNTING DOWN OR LOWER REFERENCE SWITCH 2
-S64 STOPPING UP
-S65 STOPPING DOWN
-S66 STOPPING ZONE

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

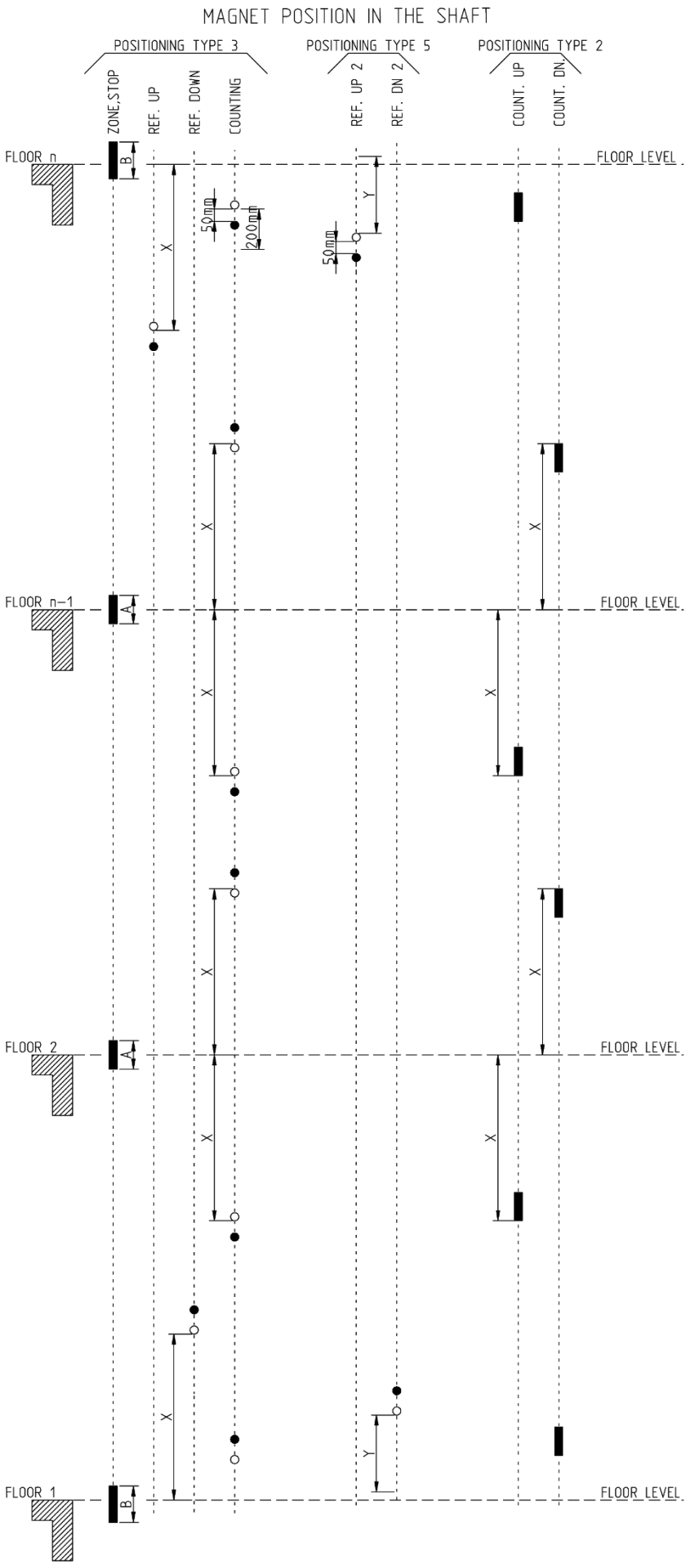
NUMBER OF MAGNETS:
TAPE LONG A: (n–2) PCS
TAPE LONG B: 2 PCS
ROUND MAGNET: (nx4) PCS
n=NUMBER OF FLOORS

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

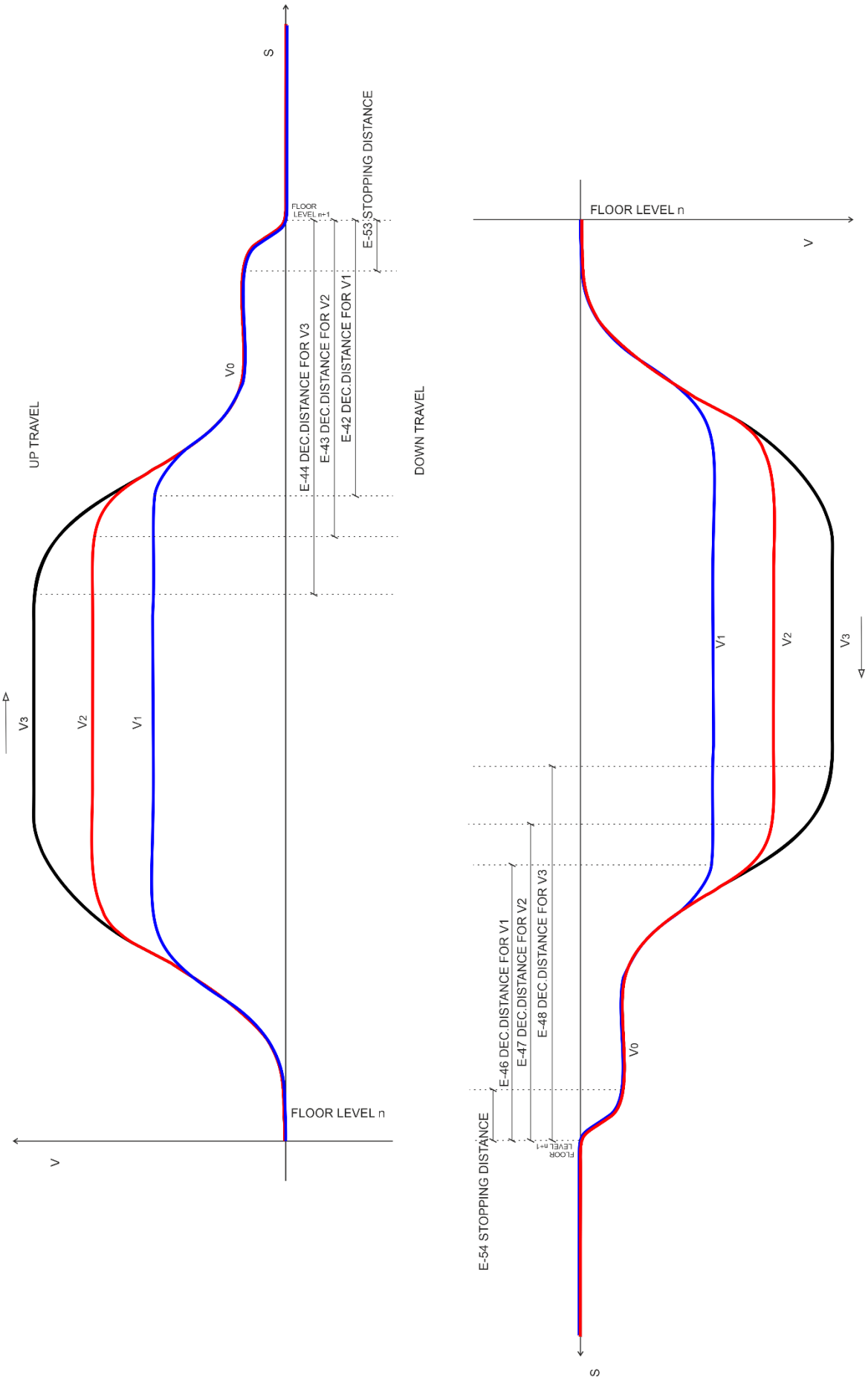
STOPPING MAGNETS SIZE FOR FINAL FLOORS B=A+50mm

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

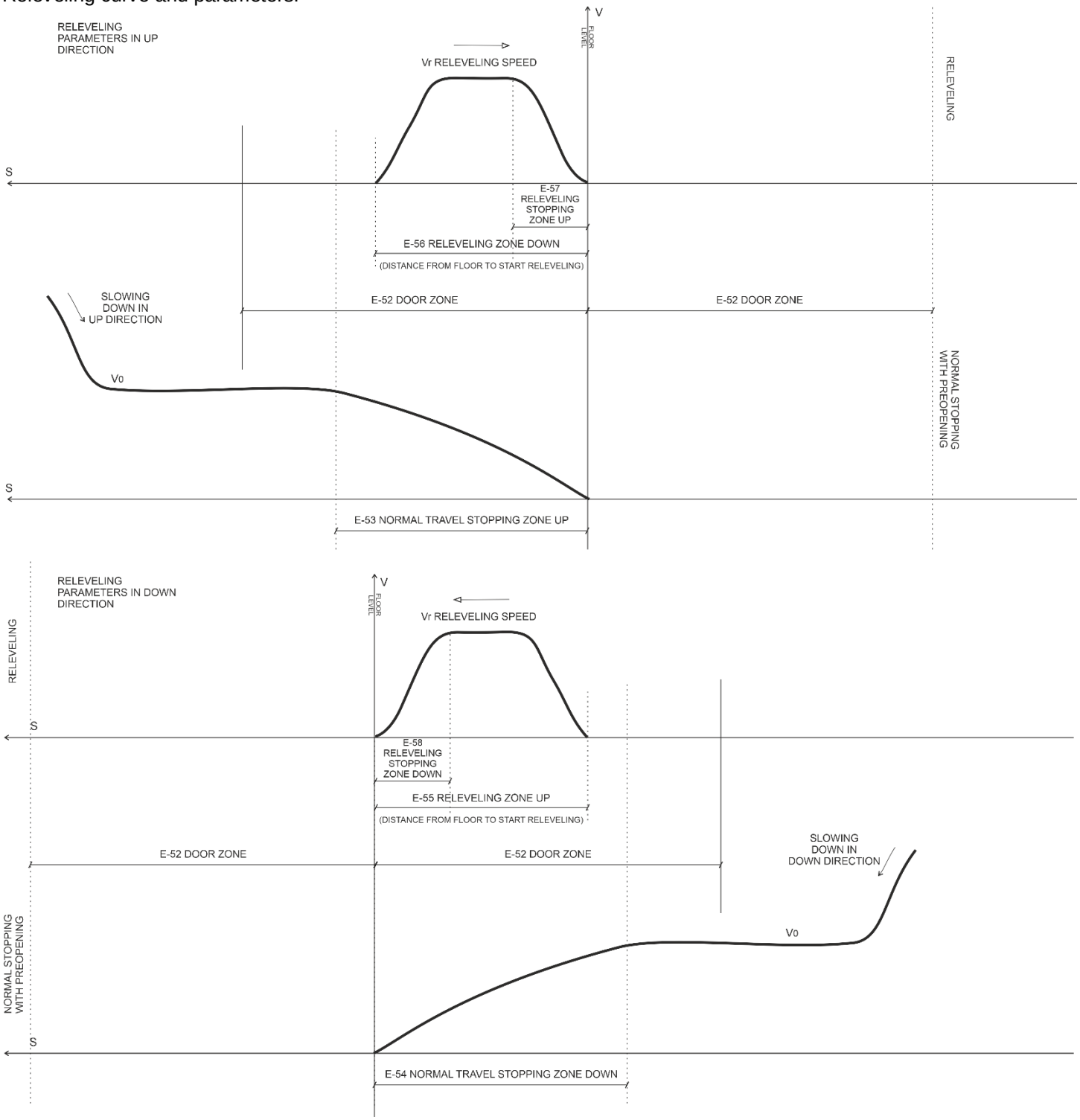

MAGNET POSITION IN THE SHAFT
POSITIONING TYPE 3
POSITIONING TYPE 5
POSITIONING TYPE 2
ZONE,STOP
REF. UP
REF. DOWN
COUNTING
REF. UP 2
REF. DN 2
COUNT. UP
COUNT. DN.
FLOOR n
FLOOR n-1
FLOOR 2
FLOOR 1
FLOOR LEVEL
A
B
X
Y
50mm
200mm

POSITIONING 6 DIAGRAM:

Driving curve and parameters:



Releveling curve and parameters:



E-41 – distance for service speed UP (with the specified parameter we determine the stop zone in service travel before the last stop in up direction)

E-42 – distance for service speed DOWN (with the specified parameter we determine the stop zone in service travel before the last stop in down direction)

Condition for speed selection:

DEST – position of destination stop in mm
ACT – Actual position in mm
DIST – Absolute value (DEST – ACT)

Parameters E-44, E-48, E-51 different of 0
DIST >E-51
Selected speed V3

Parameters E-43, E-47, E-50 different of 0
DIST >E-50
Selected speed V2

Parameters E-49 different of 0
DIST < E-49
Selected speed V0
ELSE Selected speed V1

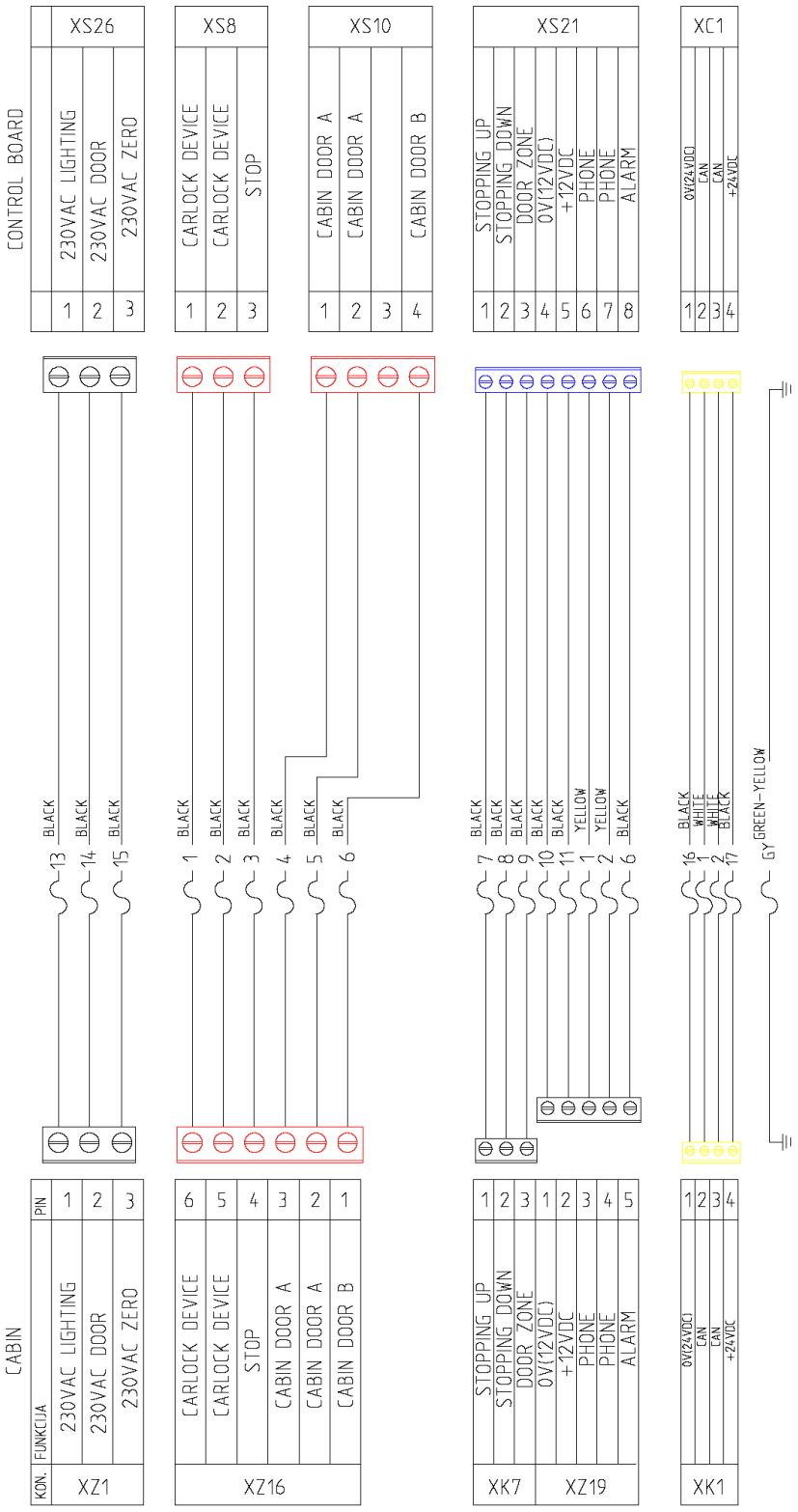
APPENDIX 2. TRAVELING CABLE CONNECTION

While instaling 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^2 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.

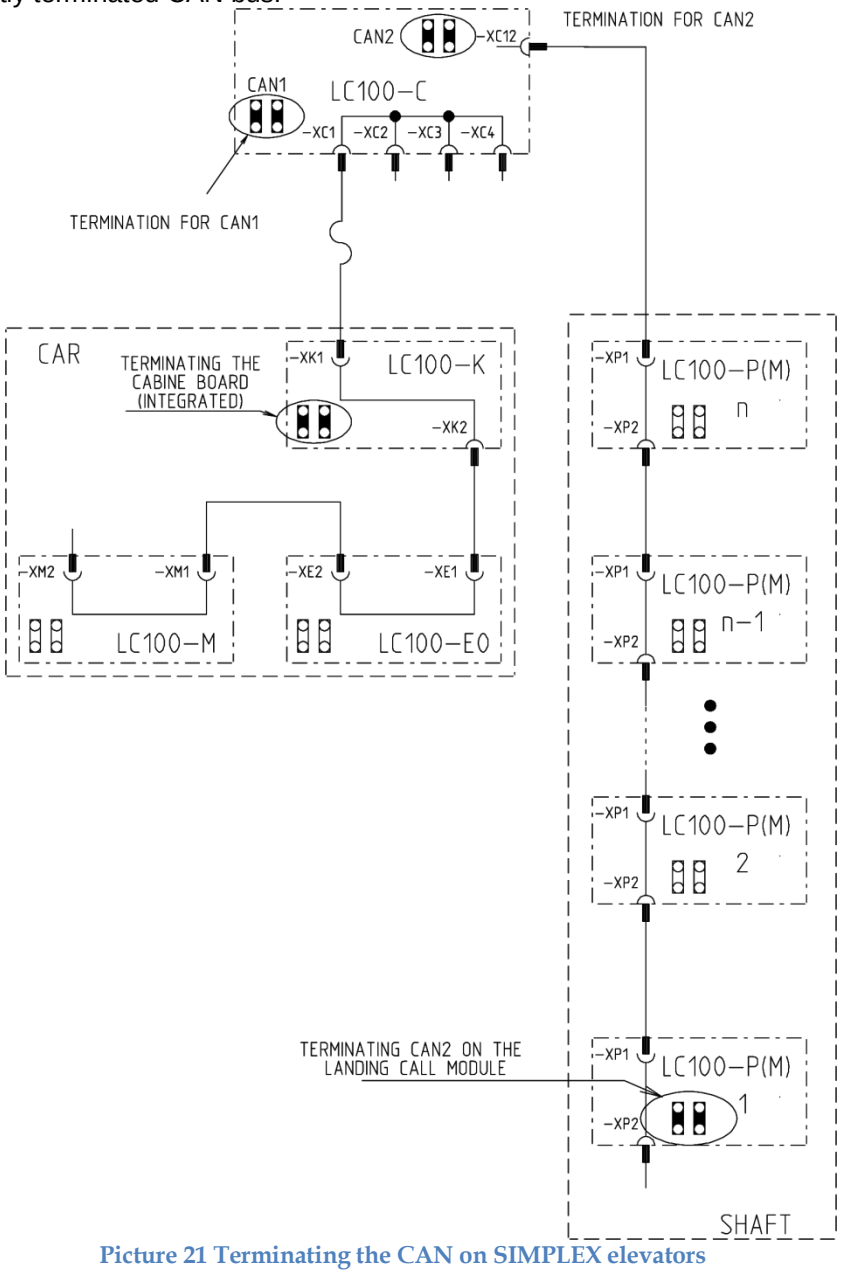
CAN bus termination is done by putting the jumpers to the places on the boards on which the termination is done (LC100-C, LC100-E, LC100-I, LC100-P or M)

LC100-K bord has implemented CAN bus termination.

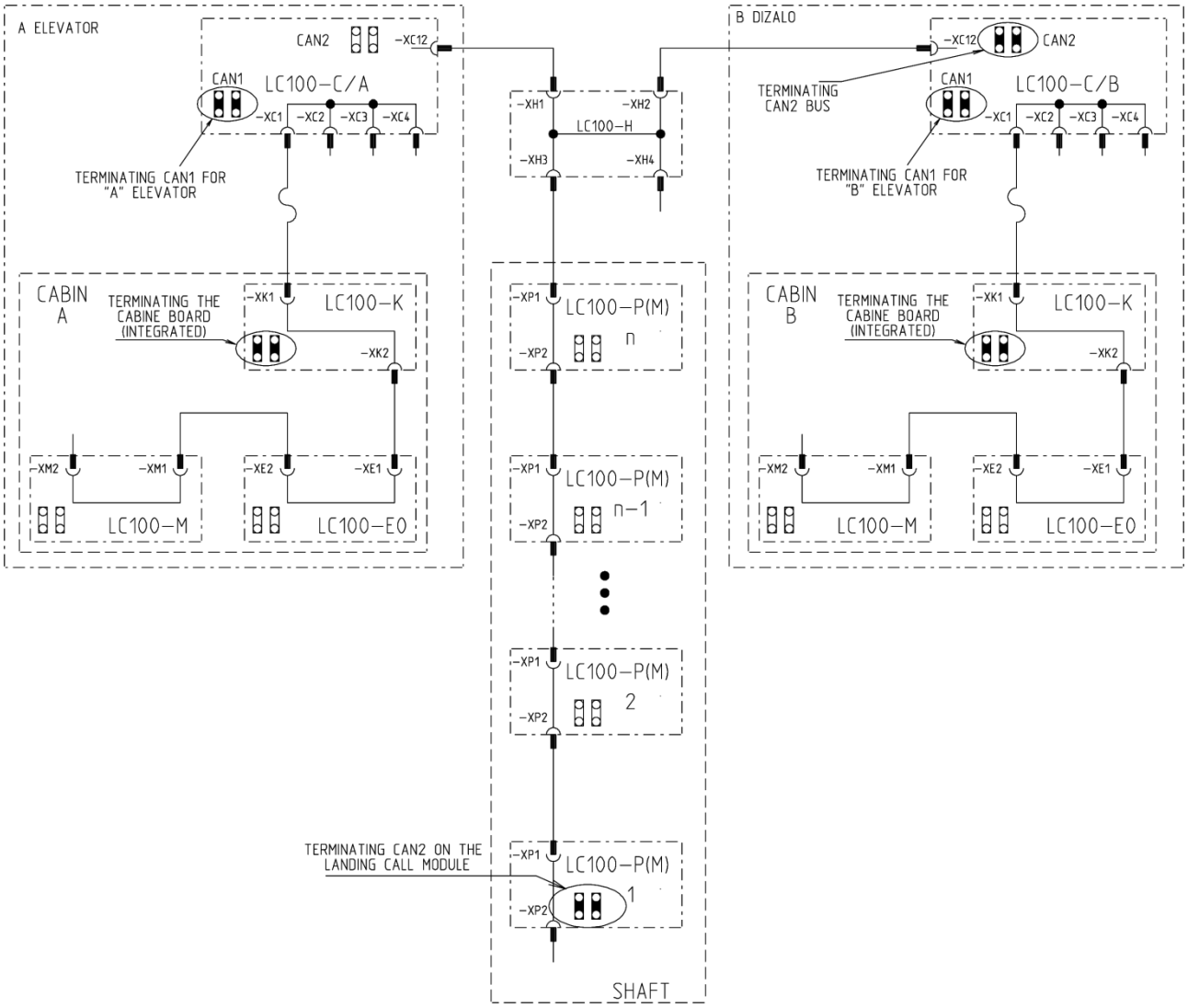
Correctly terminated CAN bus means that the termination is done on both ends of the CAN communication bus. On simplex elevators termination is done on the LC100-K (integrated) and on the LC100-C board for CAN 1 communication and for the landing calls (CAN2) termination is done on the LC100-C bord and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

When the CAN bus is correctly terminated resistance betwen CAN_L and CAN_H line has to be cca 68Ω (betwen pins XC1.2 and XC1.3)

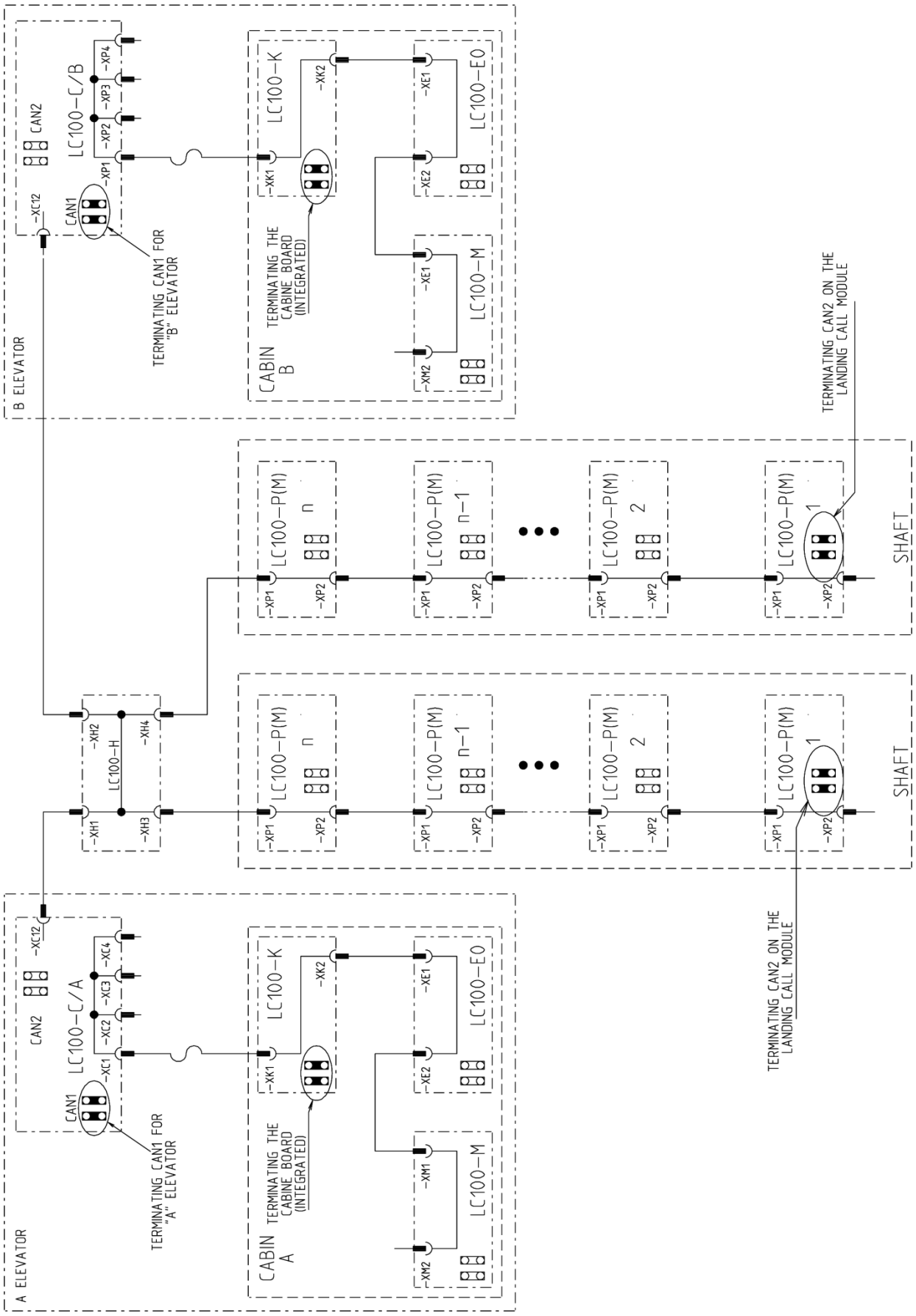
Examples of correctly terminated CAN bus:



Picture 21 Terminating the CAN on SIMPLEX elevators



Picture 12 Terminating the CAN bus on DUPLEX elevators


B ELEVATOR
CAN2
-XC12
LC100-C/B
-XP4
-XP3
-XP2
-XP1
CAN1
TERMINATING CAN1 FOR "B" ELEVATOR
CABIN B
LC100-K
-XK1
-XK2
TERMINATING THE CABINE BOARD (INTEGRATED)
LC100-E0
-XE1
-XE2
LC100-M
-XM2
TERMINATING CAN2 ON THE LANDING CALL MODULE
LC100-P(M)
n
n-1
2
1
-XP1
-XP2
SHAFT
-XH2
LC100-H
-XH4
-XH1
-XH3
A ELEVATOR
-XC12
LC100-C/A
-XC4
-XC3
-XC2
-XC1
TERMINATING CAN1 FOR "A" ELEVATOR
-XM1

APPENDIX 4. ANTS SAFE PROCEDURE

6.8 Introduction

The LC100 safe positioning system consists of Kubler Ants LES02 (safe linear encoder), Kubler PSU02 evaluation unit and LC100-B2 or LC100-KZ boards connected to the X3 terminal on the PSU02 unit. The evaluation unit is responsible for safety features of the positioning system (limit switch, UCM detection, inspection limit switch), as well as bridging of the door safety circuit. The LC100 system communicates with the PSU2 evaluation unit via CANopen interface, so the complete setup procedure and parametrization can be done from the LC100-D2 terminal. For mechanical installation of the system, see the Ants LES02 installation manual. The LC100-C software version must be 4.451.12 or greater to use the ANTS Safe system.

6.9 Parameter checking

Check that the following parameters are set up and that their value is correct: *A-1*, *A-11*, *E-1*, *E-41*, *E-42*, *E-45*, *E-46, E-53, E-54, E-60*, *E-61*, *E-62*, *E-63* and *E-64*.

If the lift speed is greater than 1,0 m/s, also check correct settings of the parameters *E-43*, *E-44*, *E-47*, *E-48*, *E-50* and *E-51*.

If the lift has short floors, check that the parameter *E-49* is set up.

If the lift has open door levelling (parameter *C-18* = 2) **or door preopening** (parameter *D-28* = 1), check parameters *E-52*, *E-55*, *E-56*, *E-57* and *E-58*.

Description of parameters can be found in paragraph 4 of this manual.

6.10 Setup procedure

At the start of the setup *PSU Setup* and *ANTS not initialized* messages will scroll on the main display, indicating the following procedure must be done.

For the setup of limit switches the ABS Safe menu is used. At the start of the procedure the PSU unit status will be *[ZONA]*. All information about the ANTS Safe system can be seen in *LC100 -> ABS SAFE -> Info* menu.

Following information can be seen in the *Info* menu:
M=[XXXX] is the status of the PSU unit.
E=[XXXX] error type (overspeed, UCM).
P= XXXXXX mm is the position of the lift.
N= X is the landing the lift is in.

Square under the letter “i” indicates the status of the safety output; full=closed, empty=open.
Asterisk under the letter “D” indicates lower referent zone.
Asterisk under the letter “U” indicates upper referent zone.
Asterisk under the letter “R” indicates inspection limit switch.
Asterisk under the letter “I” indicates retardation zone.
Asterisk under the letter “Z” indicates that the lift is in door zone.
Square under the letter “B” indicates the status of the bridge output; full=closed, empty=open.
Asterisk under the letter “F” indicates flush zone.

Asterisk under the letter “P” indicates preopening output.
Asterisk under the letter “N” indicates levelling output.
Asterisk under the letter “H” indicates order for leaving the inspection prelimit zone in reduced spaces.

Step 1. Go to *LC100 -> ABS SAFE -> Startup -> Init ABS SAFE* menu and press Enter key. You will see message “Sending” as the lift controller sends several parameters to the PSU unit.

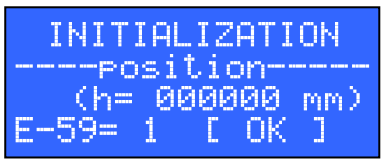
Step 2. Drive the lift upwards until the counterweight touches the buffer**. NOTE: If the *F* bit in the *E-60* parameter is marked with an asterisk (*)**, lower the lift halfway between this position and the top landing station. Then enter the *LC100 -> ABS SAFE -> Startup -> Limit UP* menu and press Enter key. The current position will be set as the limit switch position.

When this step is done the PSU unit status will be as shown.

Step 3. Drive the lift downwards until the car touches the buffer. **NOTE: If the *F* bit in the *E-60* parameter is marked with an asterisk (*)**, raise the lift halfway between this position and the bottom landing station. Then enter the *LC100 -> ABS SAFE -> Startup -> Limit DOWN* menu and press Enter key. The current position will be set as the limit switch position.

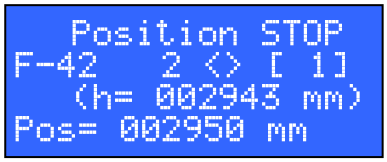
When this step is done the PSU unit status will be as shown.

Step 4. Bring the lift in the lowest landing and initialize its position. Go to the *Parameters -> Type E Positioning -> E-59* parameter, select the lowest floor (you should see *E-59 = 1* on the bottom row of the screen and press Enter key) and press Enter key. NOTE: The number mentioned above is the value of the *A-11* parameter, 1 in most cases, but can be different in asymmetrical multiplex system.



Step 5. Bring the lift in a floor that is in the middle of the shaft, using the *Calls* menu, and initialize *„Leveling adj.“* test mode. To initialize, go in menu *LC100 -> TEST MODE -> LEVELING ADJ*, turn on with right arrow key and confirm with enter key. This procedure will test the stopping distances (parameters *E-53* and *E-54*) and adjust them. NOTE: The lift will run with reduced speed.

Step 6. Drive the lift from floor to floor, using the *Calls* menu, and set up proper landing positions using the *Parameters -> Type F Stops position* parameters. For second landing use parameter *F-42*, for the third *F-43*, and so on. NOTE: The lift will run with reduced speed.

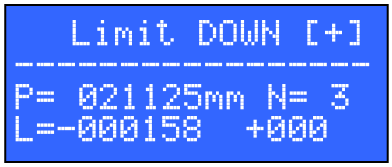


If the *F* bit in the *E-60* parameter is marked with an asterisk (*), the setup procedure stops here.

Step 7. To set up the door zone positions in the PSU unit go to menu *LC100 -> ABS SAFE -> Startup -> Stop ZONE*. Bring the lift to the lowest floor, enter the menu and press Enter key. The procedure is automatic, the lift will run twice trough shaft and setup the landing positions for the PSU unit. Before the start of this procedure the status of the PSU unit will be *[PREL]*, during the procedure it will first switch to *[DEFS]* and then to *[CONF]*. After the procedure is done the PSU unit status will be *[NORM]*.

Step 8. To adjust the positions of the limit switches the menu *LC100 -> ABS SAFE -> Supervision* is used. To lower the position of the upper limit switch, go to submenu *Limit UP [-]*, in the bottom row the current position of the limit switch will be displayed. In the right part of the bottom row you can adjust the desired change of position of the limit switch in mm. Once you press enter, the position will be modified by that amount. The same interface is used in submenu *Limit DOWN [+]*, to raise the position of the lower limit switch.

NOTE: Be careful when doing this procedure, because it is not possible to raise the upper limit switch if it has been set up too close to the top floor, or lower the lower limit switch if it has been set up too close to the bottom floor. The recommended distance of limit switches and final floors is between 10 and 50 mm, but always pay attention that the levelling zones (parameters *E-55* and *E-56*) must be smaller than the distance between final floor and limit switches.



6.11 Parameter description

Parameter ***A-1*** defines the number of landings.

Parameter ***A-11*** defines the lowest landing in asymmetrical multiplex system, where the lift starts at a higher landing than the lowest landing of a group. Normally it is set to 1, e.g. if set to 2, the lifts lowest landing is on the second floor of the group.

Parameter ***E-1*** selects the positioning type, should be set to 6.

Parameters ***E-41*** and ***E-45*** define the end positions of inspection travel in up and down direction, relative to the respective final landings. If the lift has low pit or headroom, this value should be set at 1300 mm.

Parameters ***E-42*** and ***E-46*** define the deceleration distances for the V1 speed (standard travelling speed) in up and down directions. Initial deceleration distances for various speeds are shown in TABLE 1.

Parameters ***E-43*** and ***E-47*** define the deceleration distances for the V2 speed in up and down directions, while the parameter ***E-50*** defines the minimum travel needed for the car to travel at V2 speed; for travels greater than parameter *E-50* the car will travel at V2 speed, for travels shorter it will travel at lower speed(s). If the parameter *E-50* is set to 0, lift will never run at V2 speed. Recommended travel lengths for various speeds are shown in TABLE 1. V2 speed is expected to be greater than the V1 speed.

Parameters ***E-44*** and ***E-48*** define the deceleration distances for the V3 speed in up and down directions, while the parameter ***E-51*** define the minimum travel needed for the car to travel at V3 speed; for travels greater than parameter *E-51* the car will travel at V3 speed, for travels shorter it will travel at lower speed(s). If the parameter *E-51* is set to 0, lift will never run at V3 speed. Recommended minimal travel lengths for various speeds are shown in TABLE 1. V3 speed is expected to be greater than the V2 speed.

Parameter ***E-49*** defines the minimal distance for which the lift will travel at the V1 speed. If the travel is shorter than this, the lift will travel at V0 (approaching) speed. If this parameter is set to 0 mm, this function is turned off.

Parameters ***E-53*** and ***E-54*** are the most important parameters regarding levelling accuracy while arriving at the floor. The two parameters define the distance before landing, at which the controller will initiate final stopping. If the parameters are set up too low, the car will overshoot the landing, and undershoot it if the parameters are too high.

Parameters ***E-55*** and ***E-56*** define the levelling distances in up and down direction, while the parameters ***E-57*** and ***E-58*** define the stopping distances during levelling procedure. Parameter ***E-52*** defines the zone in which lift operation with opened door(s) is allowed.

Parameters *E-60*, *E-61*, *E-62*, *E-63* and *E-64* are additional parameters for the ANTS Safe system.

Parameter ***E-60*** defines the functionality of the ANTS Safe system.

If the bit *A* is marked with an asterisk (*), the controller will use some functionalities of the ANTS Safe system.

If the bit *F* is marked with an asterisk (*), the controller will use the ANTS Safe system for limit switches ONLY, there will be no bridging of door safety circuit for any reason. For this option, the setup procedure of the lift positioning system stops at Step 6. **NOTE: This will disable door safety contact testing according to the requirements of the *EN 81-20:2014 §5.12.1.9*.** Additionally, it is not possible to adjust limit switch positions using the *LC100 -> ABS SAFE -> Supervision* menu as shown in Step 8, so their position should be set up properly in steps 2 and 3.

If the bit *B* is marked with an asterisk (*), the controller will use the ANTS Safe system additionally for upper inspection limit switch in lifts with reduced headroom (according to *EN 81-21:2018 §5.5.3.4*). The position of this inspection switch is always 1200 mm below the upper limit switch position. Additionally, when driving upwards in inspection mode, inspection travel will stop 100 mm before this point, and inspection operation will be possible in downwards direction. No inspection operation is possible when the lift is within 1200 mm zone from the limit switch.

If the bit *C* is marked with an asterisk (*), the controller will use the ANTS Safe system additionally for lower inspection limit switch in lifts with reduced pit (according to *EN 81-21:2018 §5.7.3.4*). The position of this inspection switch is always 1200 mm above the lower limit switch position. Additionally, when driving downwards in inspection mode, inspection travel will stop 100 mm before this point, and inspection operation will be possible in upwards direction. No inspection operation is possible when the lift is within 1200 mm zone from the limit switch.

If the bit *D* is marked with an asterisk (*), the controller will use the ANTS Safe system to monitor lift speed in inspection operation. For this option to function, the service signal must be connected to the PSU02 unit trough a normally closed (NC) contact. If the speed exceeds 0,6 m/s, the PSU02 will break the safety circuit, causing the lift to stop.

If the bit *E* is marked with an asterisk (*), the controller will additionally use the ANTS Safe system for fast start door bridging.

Parameter ***E-61*** defines zone in which, with the lift going up, the car will slow down to 1 m/s. It allows systems faster than 1 m/s to use counterweight buffers designed for 1 m/s speed. The zone is measured from the limit switch.

Parameter ***E-62*** defines zone in which, with the lift going down, the car will slow down to 1 m/s. It allows systems faster than 1 m/s to use car buffers designed for 1 m/s speed. The zone is measured from the limit switch.

Parameter ***E-63*** defines the zone in which lift operation with opened door(s) is allowed. It is recommended this parameter is at least 30 mm greater than the parameter *E-52*.

Parameter ***E-64*** defines the lift nominal speed. If the positioning system measured lift speed is greater than the value in this parameter, PSU unit will trip.

Lift nominal speed	Deceleration distance	Travel length
0,5 m/s	450 mm	1080 mm
0,6 m/s	600 mm	1440 mm
0,8 m/s	1000 mm	2400 mm
1,0 m/s	1200 mm	2880 mm
1,2 m/s	1450 mm	3480 mm
1,4 m/s	2000 mm	4800 mm
1,6 m/s	2600 mm	6240 mm
2,0 m/s	3800 mm	9120 mm
2,5 m/s	5600 mm	13440 mm

TABLE 1. Lift deceleration distances and minimal travel lengths

6.12 Resetting the system

If the system goes into fault (UCM or overspeed have occurred) or for any reason it needs to be reset and adjusted from the start, menu *LC100 -> ABS SAFE -> Reset* is used.

If any type of UCM or overspeed happens, the PSU02 Evaluation unit will enter the *[LOCK]* state.

To unlock the system, go to menu *LC100 -> ABS SAFE -> Reset -> Unlock* and press enter. After that, turn off the main switch (take note that this step needs to be done within 15 minutes), leave the lift turned off for 30 to 60 seconds, and turn back on.

If the PSU02 unit enters an error state, a reset is needed. Possible causes of this can be problems with the PSU02 unit or problems with the LES02 encoder unit. Additionally, there could be problems with the connection between LES02 and PSU02 units, the LES02 encoder could be tilted more than 15°. To reset the system, go to menu *LC100 -> ABS SAFE -> Reset -> Restart* and press enter.

To fully reset the system, go to menu *LC100 -> ABS SAFE -> Reset -> Factory reset* and press enter. After that, turn off the main switch, leave the lift turned off for around 30 seconds, and turn back on.

NOTE: after this operation, the whole ABS Safe system needs to be set up from the start.

NOTES:

7. Document version history

Date:	Rev.	Details:
1.1.2010.	1.0	First version of the document.
15.10.2015.	7.0	Unused boards removed
15.10.2017.	8.0	Added new boards with descriptioins
22.8.2019.	9.0	Added new input/output parameters with descriptions.
3.2.2022.	9.0.6b	Unused boards removed
7.3.2022.	10.0.0a	Removed outdated parts of documentation that are no longer relevant to the system
27.7.2022.	10.0.0b	Corrected and proofread descriptions of boards – picture description
18.1.2023.	10.0.0c	Added new input/output parameters with descriptions.
28.02.2025.	10.0.0e	Added new boards, new input/output modules, additional diagnostic parameters with detailed descriptions. Improved system statistics , Enhanced troubleshooting section with common issues and solutions. Removed outdated configuration options and deprecated parameters.
30.02.2025.	10.0.0f	Updated formatting for better readability, added document version history

MLC
ADVANCED ELEVATOR SOLUTIONS

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
W WWW.MLC.HR

authorized distributor: