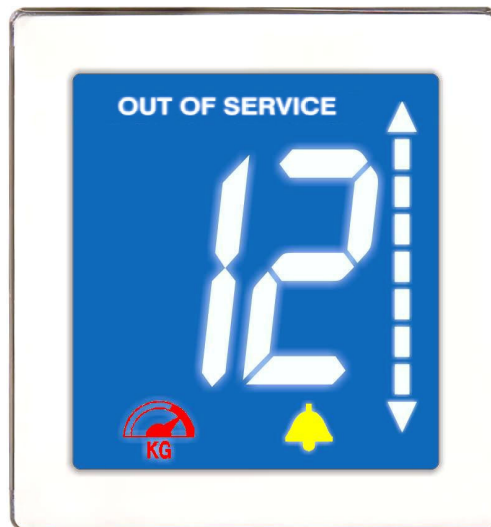


# PROGRAMMABLE SMALL LCD DISPLAY

Floor display for each type of lift system  
Car display for lifts platforms

## ICARO\_DPLXX

Programming  
manual



Programmable *small* LCD display

### CODE:

ICARO\_DPL\_D00: without colored icon

ICARO\_DPL\_D01: the overload colored icon (red)

ICARO\_DPL\_D10: -the Alarm Set colored icon (yellow)

ICARO\_DPLD11: the overload icon (red) and Set colored icon (yellow)

**ENGLISH**

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# Programmable *Small* LCD display manual (parallel version)

Rev. n. 07 hardware ver. 1.2 firmware ver. 2.3

Date: 24/11/09

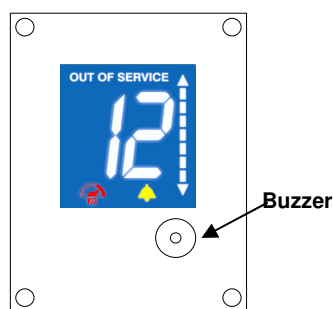
## Included in the packaging:

- Small LCD display;
- Mounting kit;
- Instructions for use.

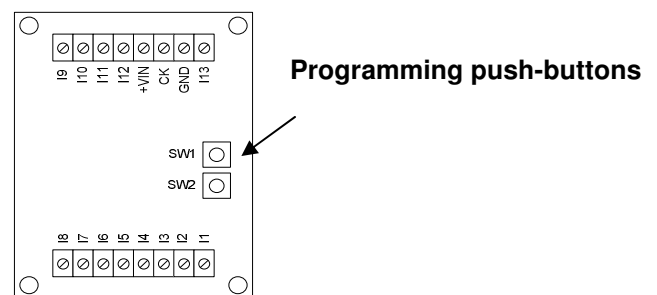
## You will find useful information and advice for correct assembly and maintenance:

1. Check the packaging integrity
2. During opening do not damage the board with sharp objects (scissors...)
3. To avoid damages use the board only with appropriate bracelet to lead electrostatic charges to ground.

## Programmable *Small* LCD display (parallel version)



Picture 1



Picture 2

## TECHNICAL DATA

<b>VISIBLE AREA</b>	50x54 mm
<b>DISPLAY ENCUMBRANCE</b>	133x74x19 mm
<b>SHEET THICKNESS</b>	Max. 3 mm.
<b>WEIGHT</b>	154g
<b>FONT TYPE</b>	White on blue background
<b>CODING</b>	1 wire for floor(11 stops),7 Segments, binary code or inverted binary code (32 stops),BCD
<b>ACTIVATION OF THE INPUTS</b>	<b>Common anode (positive common) or Common cathode (negative common)</b> in line with relative hardware version
<b>PROGRAMMING</b>	Act the SW1 and SW2 push buttons on the board
<b>SPECIFICS INPUT</b>	For the up/down arrow indications (40mm), overload, out of order, set alarm and gong
<b>MOUNTING</b>	Thanks to the esthetics and the compact design, this display allow an easy and elegant installation on the car button panel
<b>POWER SUPPLY(COMMON ANODE)</b>	12-24VDC± 10% 12*-24 VAC ± 10%
<b>POWER SUPPLY(COMMON CATHODE)</b>	24VDC± 10% 12*-24 VAC ± 10%
<b>MAXIMUM POWER</b>	1,2W
<b>TEMPERATURE WORKING RANGE</b>	from -15°C to +50°C
<b>TEMPERATURE STOCKING RANGE</b>	from -25°C to +60°C

\*It's possible to supply the display with 12 Vac but with the degradation of the buzzer signal.

The display supports five coding modes : 1 wire for floor ,7 segments, Binary code or inverted binary code.

- The 1 wire for floor coding allow to assing to each input (I1 – I8)and (I11–I13) a floor up to reach a maximum of 11 stops.
- The 7 segment coding uses 7 inputs (I1-I7) for the 7 segments of a digit. The input I11 is used to visualize the sign "-", while the input 12 activates the ten..
- The Binary coding works using 5 bits (the first 5 inputs of the board I1 – I5) up to reach a maximum of 32 stops.
- The inverted binary code coding works using 5 bits (the first 5 inputs of the board I1 – I5) up to reach a maximum of 32 stops.
- The BCD use the first 4 inputs to calculate the unity in binary code, the input "5" to calculate the ten and the input "6" to calculate the sign. If both I5 and I6 are activated, I6 has priority.

The display programming made through SW1 and SW2 push-buttons allow to:

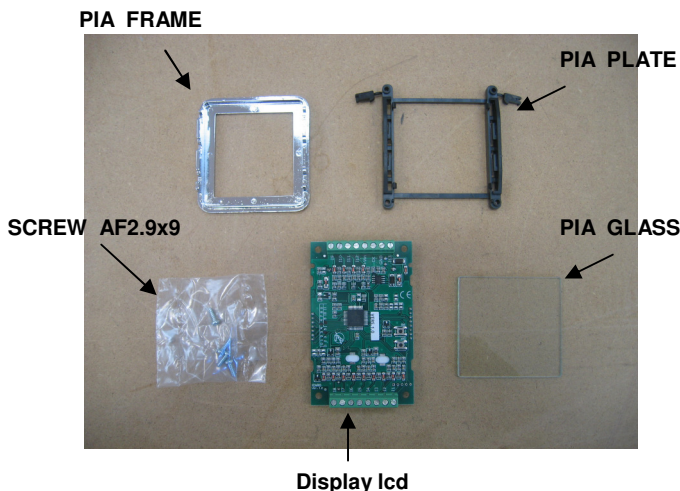
- select the code to use (1 wire for floor,7 segments, binary, inverted binary denied or BCD)on menu 2;
- adjust the volume of the buzzer mounted in the board on menu 7;
- program the I8, I11, I12, I13 input like a normal input (as floor input) or for the activation of specific functions(Alarm Set,Gong, Overload,Out of order)on menu 6 and 8;
- choose what characters to display for each selected floor(menu 1).

The following features are optional and must be explicitly requested:

- the antivandal glass
- Common cathode inputs activation
- the overload colored icon (red)
- the Alarm Set colored icon (yellow)

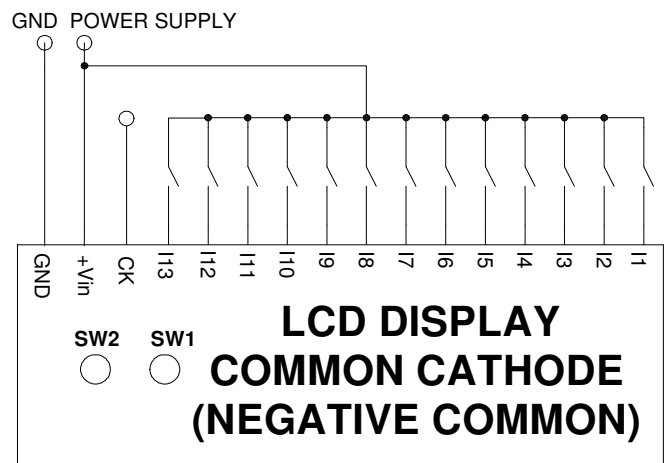
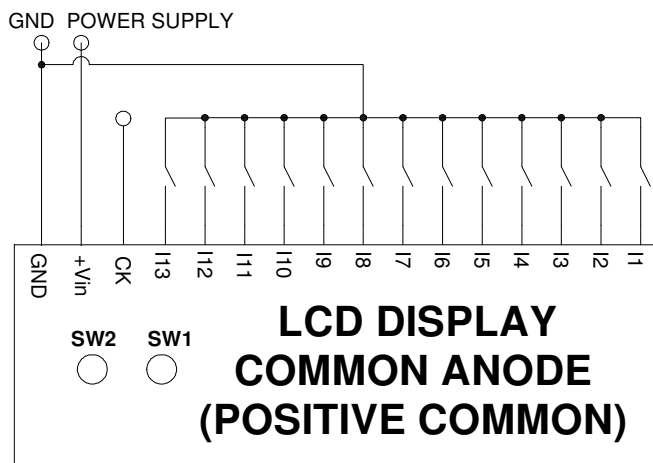
## PACKAGING CONTENT

## SUPPLIED MOUNTING KIT



CODE	DESCRIPTION	QUANTITY
SCREWAF2.9x9.5	FIXING SCREW	4
PIA_FRAME	METAL FRAME:	1
PIA_GLASS	GLASS	1
PIA_PLATE	CHASSIS	1

## CONNECTION DRAWING



**NOTE:** *Common anode small lcd display* is different from *common cathode* version trough a label in the board rear (with writing "common cathode"). If there is no label, hardware is common anode

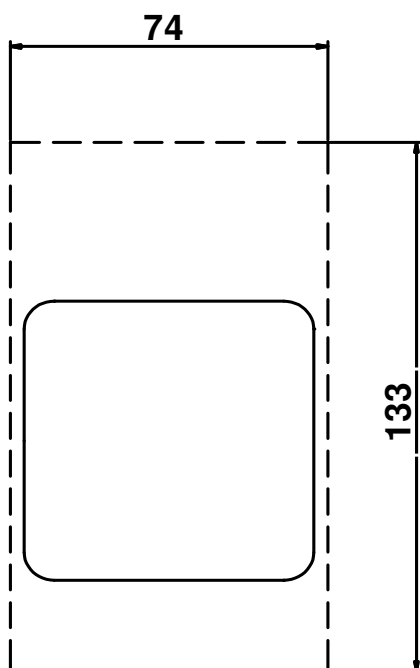
## BOARD PINOUT

(view fig 2 to page 2)

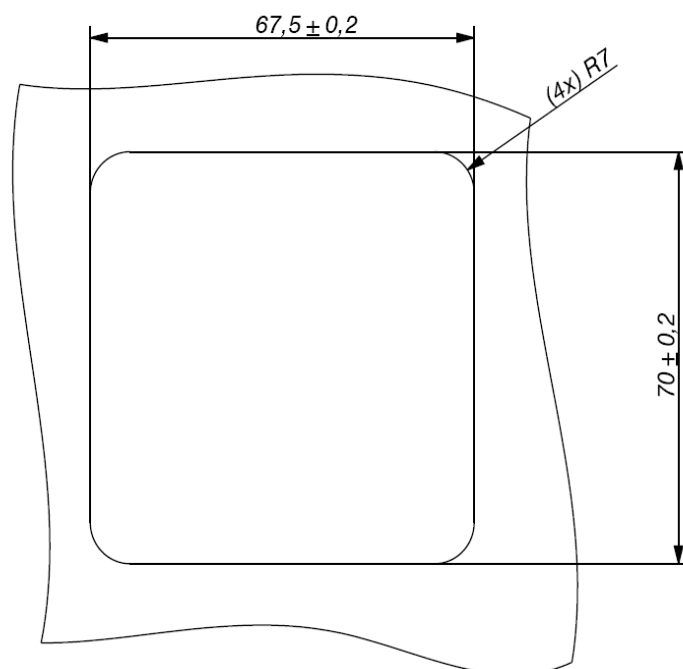
PIN	DESCRIPTION	DEFAULT
I1	INPUT 1	-1
I2	INPUT 2	0
I3	INPUT 3	1
I4	INPUT 4	2
I5	INPUT 5	3
I6	INPUT 6	4
I7	INPUT 7	5
I8	INPUT 8 / ALARM SET	6
I9	UP ARROW	UP ARROW
I10	DOWN ARROW	DOWN ARROW
I11	INPUT 11/GONG	7
I12	INPUT 12/OUT OF ORDER	8
I13	INPUT 13/OVERLOAD	9
+VIN	POWER SUPPLY (+)	POWER SUPPLY (+)
CK		
GND	POWER SUPPLY (-)	POWER SUPPLY (-)

**NOTE:** The I8, I11, I12, I13 are floor inputs with the default configuration to change configuration consult menu 6 and 8.

### DISPLAY ENCUMBRANCE (BEHIND THE MOUNTING PLATE)



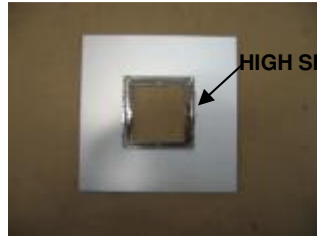
### DISPLAY CUT OUT



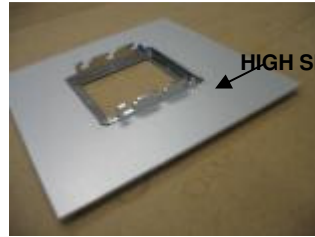
## GUIDED ASSEMBLING PROCEDURE



SUPPLIED MOUNTING KIT



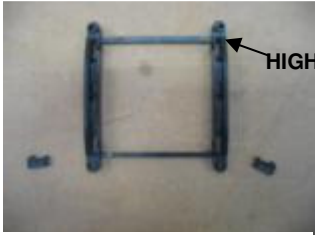
INSERT THE METALLIC FRAME OF THE DISPLAY IN THE DEDICATED APERTURE OF THE PLATE



HIGH SIDE

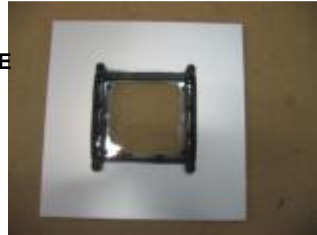


INSERT THE GLASS IN THE FRAME

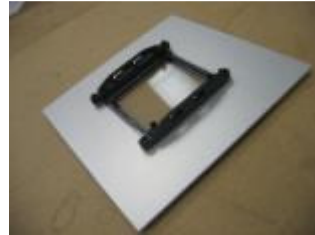


HIGH SIDE

REMOVE THE PLASTIC PIVOT FROM THE CHASSIS



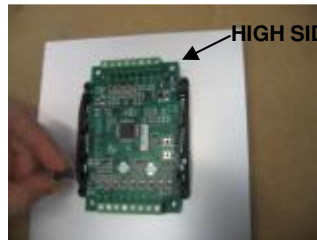
APPLY THE CHASSIS TO THE FRAME;  
MOVE DOWN TO BLOCK THE RELIEFS OF THE FRAME WITH THE CHASSIS APERTURES



REMOVE THE PROTECTIVE FILM OF THE DISPLAY



BLOCK THE BOARD TO THE CHASSIS



HIGH SIDE

APPLY THE FIXING PIVOT IN THE PROPER APERTURES OF THE CHASSIS



APPLY THE SCREWS TO FIX THE CHASSIS



THE PROCEDURE IS COMPLETED

## GUIDED DISASSEMBLING PROCEDURE



NEEDED EQUIPMENT TO DISASSEMBLE THE DISPLAY



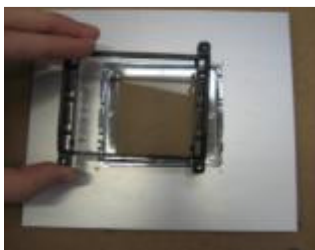
REMOVE THE FIXING SCREWS WITH THE SCREWDRIVER



REMOVE THE FIXING PIVOT FROM THE APERTURES IN THE CHASSIS



REMOVE THE BOARD FROM THE PLASTIC CHASSIS



MOVE UP THE CHASSIS TO UNBLOCK THE FRAME RELIEFS AND THE CHASSIS APERTURES



REMOVE THE GLASS FROM THE METALLIC FRAME



REMOVE THE METALLIC FRAME FROM THE PLATE



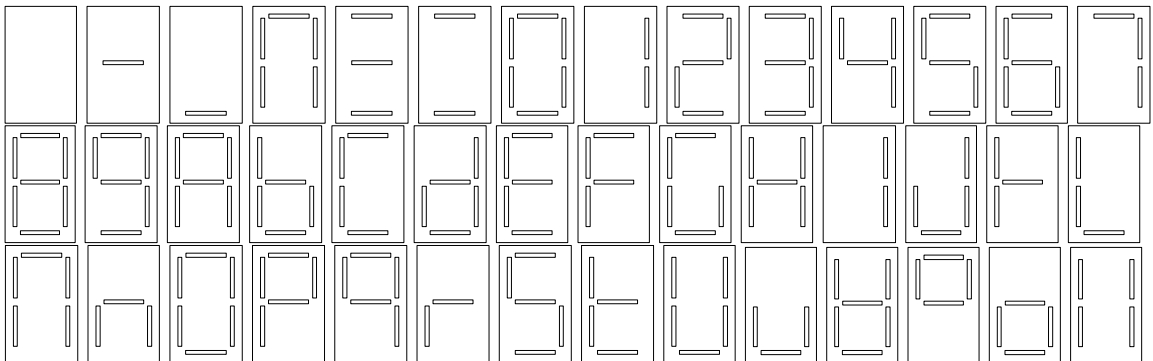
THE PROCEDURE IS COMPLETED

## PROGRAMMING MODE:

In the display are available 2 programming buttons denominated **SELECT (SW1 button)** and **ENTER (SW2 button)**. **SELECT** button allow to choose a menu or change a parameter, while **ENTER** button allow to confirm the choice. Press **SELECT** button to enter into modality of programming, while wait the timeout of 30 seconds to exit programming mode without modify any parameter.

**Menu 1:** It allows to choose what characters to display for each selected floor.

- Enable and keep active the floor that you want to modify the visualization.
- Press one time the **SELECT** button. Display will visualize the string "M1";
- Press the **ENTER** button to access the programming menu .  
The first digit will be on and blinking, the second digit will be off.  
With the **SELECT** button is possible to choose the **character** that will be visualized on the first digit, keeping the button permanently pressed down, the characters change quickly.
- Press the **ENTER** button to confirm the character.  
The first digit stop to blink and the second digit is on and blinking.  
Repeat the procedure to choose the character that will be visualized on the second digit
- Press the **ENTER** button to confirm the character.  
*The programming procedure is completed and the data are stored.*



**Menu 2:** It allows to choose the floors coding mode (look at the table below).

- Press two time the **SELECT** button. Display will visualize the string "M2";
- Press the **ENTER** button to access the programming menu.  
The digits blink and visualize actually selected coding mode.  
With the **SELECT** button is possible to select the desired coding mode.
- Press the **ENTER** button to confirm the modality.  
*The programming procedure is completed and the data are stored.*

Modality	Display	Description
1 wire for floor	<b>1P</b>	Each input matches a floor.(Range from -1 to 9)
7 Segments	<b>7S</b>	Each input(I1-I7) matches a segment of a digit. The input I11 is used to visualize the sign "-", while the input 12 activates the ten..
Binary code	<b>B</b>	Use only the first 5 inputs to calculate the floor number in binary code. (Range from 0 to 31).
Inverted binary code	<b>BN</b>	Use only the first 5 inputs to calculate the floor number in binary code. (Range from 0 to 31).
BCD	<b>BC</b>	Use the first 4 inputs to calculate the unity in binary code, the input "5" to calculate the ten and the input "6" to calculate the sign. If both I5 and I6 are activated, I6 has priority.

### BCD TRUTH TABLE

VISUALIZED NUMBERS	I1= LSB	I2	I3	I4 = MSB	I5 = TEN
0	ON	ON	ON	ON	OFF
1	OFF	ON	ON	ON	OFF
2	ON	OFF	ON	ON	OFF
3	OFF	OFF	ON	ON	OFF
4	ON	ON	OFF	ON	OFF
5	OFF	ON	OFF	ON	OFF
6	ON	OFF	OFF	ON	OFF
7	OFF	OFF	OFF	ON	OFF
8	ON	ON	ON	OFF	OFF
9	OFF	ON	ON	OFF	OFF
10	ON	ON	ON	ON	ON
11	OFF	ON	ON	ON	ON
12	ON	OFF	ON	ON	ON
13	OFF	OFF	ON	ON	ON
14	ON	ON	OFF	ON	ON
15	OFF	ON	OFF	ON	ON
16	ON	OFF	OFF	ON	ON
17	OFF	OFF	OFF	ON	ON
18	ON	ON	ON	OFF	ON
19	OFF	ON	ON	OFF	ON

**NOTE:**

The activation of input I6 command the activation of “-“symbol.

**OFF:** input disabled (switch open)

**ON:** input enabled (switch close)

### BINARY CODING TRUTH TABLE

VISUALIZED NUMBERS	I1 LSB	I2	I3	I4	I5 MSB
0	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF
5	ON	OFF	ON	OFF	OFF
6	OFF	ON	ON	OFF	OFF
7	ON	ON	ON	OFF	OFF
8	OFF	OFF	OFF	ON	OFF
9	ON	OFF	OFF	ON	OFF
10	OFF	ON	OFF	ON	OFF
11	ON	ON	OFF	ON	OFF
12	OFF	OFF	ON	ON	OFF
13	ON	OFF	ON	ON	OFF
14	OFF	ON	ON	ON	OFF
15	ON	ON	ON	ON	OFF
16	OFF	OFF	OFF	OFF	ON
17	ON	OFF	OFF	OFF	ON
18	OFF	ON	OFF	OFF	ON
19	ON	ON	OFF	OFF	ON
20	OFF	OFF	ON	OFF	ON
21	ON	OFF	ON	OFF	ON
22	OFF	ON	ON	OFF	ON
23	ON	ON	ON	OFF	ON
24	OFF	OFF	OFF	ON	ON
25	ON	OFF	OFF	ON	ON
26	OFF	ON	OFF	ON	ON
27	ON	ON	OFF	ON	ON
28	OFF	OFF	ON	ON	ON
29	ON	OFF	ON	ON	ON
30	OFF	ON	ON	ON	ON
31	ON	ON	ON	ON	ON

### BINARY INVERTED CODING TRUTH TABLE

VISUALIZED NUMBERS	I1 LSB	I2	I3	I4	I5 MSB
0	ON	ON	ON	ON	ON
1	OFF	ON	ON	ON	ON
2	ON	OFF	ON	ON	ON
3	OFF	OFF	ON	ON	ON
4	ON	ON	OFF	ON	ON
5	OFF	ON	OFF	ON	ON
6	ON	OFF	OFF	ON	ON
7	OFF	OFF	OFF	ON	ON
8	ON	ON	ON	OFF	ON
9	OFF	ON	ON	OFF	ON
10	ON	OFF	ON	OFF	ON
11	OFF	OFF	ON	OFF	ON
12	ON	ON	OFF	OFF	ON
13	OFF	ON	OFF	OFF	ON
14	ON	OFF	OFF	OFF	ON
15	OFF	OFF	OFF	OFF	ON
16	ON	ON	ON	ON	OFF
17	OFF	ON	ON	ON	OFF
18	ON	OFF	ON	ON	OFF
19	OFF	OFF	ON	ON	OFF
20	ON	ON	OFF	ON	OFF
21	OFF	ON	OFF	ON	OFF
22	ON	OFF	OFF	ON	OFF
23	OFF	OFF	OFF	ON	OFF
24	ON	ON	ON	OFF	OFF
25	OFF	ON	ON	OFF	OFF
26	ON	OFF	ON	OFF	OFF
27	OFF	OFF	ON	OFF	OFF
28	ON	ON	OFF	OFF	OFF
29	OFF	ON	OFF	OFF	OFF
30	ON	OFF	OFF	OFF	OFF
31	OFF	OFF	OFF	OFF	OFF

**OFF:** input disabled (switch open)

**ON:** input enabled (switch close)

**NOTE:** The tables are compiled with zero offset setted in the MENU 4.

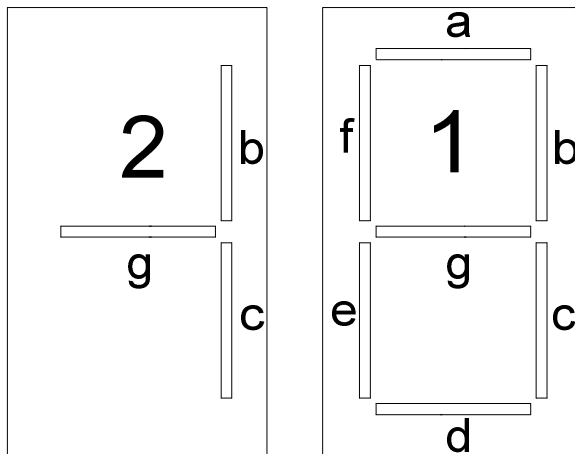


## 7 SEGMENTS CODING

( If you enable an input, one of the seven segment turn on).

Each input(I1-I7) matches a segment of a digit. The input I11 is used to visualize the sign "-" (segment g2), while the input I2 activates the ten (b2,c2 segment ). The coding segments 7 can manage up to 29 stops (- 9 to 19). Using the menu 8 you can change its input I11 (like gong) and I12 (as out of service).

SEGMENTS PART 1										SEGMENTS PART 2		
I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13
a1	b1	c1	d1	e1	f1	g1	Alarm 🔔	↗️	↘️	g2	b2+c2	OVL



**Menu 3:** It allows to choose the time for the display's backlight shutdown (minutes).

- Press three time the **SELECT** button. Display will visualize the string "M3";
- Press the **ENTER** button to access on the programming menu.  
The digits blink and visualize the actually selected shutdown's time.  
With the **SELECT** button is possible to change the timeout in a range from 0 to 99 minutes.  
Note: if it is selected "0" the backlight will be always off.
- Press the **ENTER** button to confirm the desired timeout.  
*The programming procedure is completed and the data are stored.*

**Menu 4:** It allows to choose the value that must be visualized at the first floor, the value for the other floors will be automatically shifted.

- Press four time the **SELECT** button. Display will visualize the string "M4";
- Press the **ENTER** button to access on the programming menu.  
The digits blink and visualize the actually selected value for the first floor.  
With the **SELECT** button is possible to choose the value for the first floor in a range from -9 to +9.
- Press the **ENTER** button to confirm the desired value.  
*The programming procedure is completed and the data are stored.*

**Menu 5:** It allows to choose the type of gong.

- Press five time the **SELECT** button. Display will visualize the string "M5";
- Press the **ENTER** button to access the programming menu.  
The digits blink and visualize the actually selected type of gong.  
With the **SELECT** button is possible to change the type of gong in a range from 1 to 3 listening to it every time it is made scrolling.

- Press the **ENTER** button to confirm the selected type of gong.  
*The programming procedure is completed and the data are stored.*

**Menu 6:** It allows to choose the management of the input 8 and the type of “out of service” signalling input 12(only write OUT OF SERVICE or OUT OF SERVICE with “FS” flashing writing.(look at the table below)

- Press six time the **SELECT** button. Display will visualize the string “M6”;
- Press the **ENTER** button to access the programming menu.  
The digits blink and visualize the actually selected management:  
0 = the input 8 is a normal parallel input and the out service display only OUT OF SERVICE.  
1 = the input 8 commands the alarm activation and the out service display only OUT OF SERVICE.  
2 =the input 8 is a normal parallel input and the out service display OUT OF SERVICE and “FS”.  
3 = the input 8 commands the alarm activation and the out service display OUT OF SERVICE and “FS”.  
Use the **SELECT** button to change the management type.
- Press the **ENTER** button to confirm the choose.  
*The programming procedure is completed and the data are stored.*

<b>Tab. 1</b>	<b>In 8</b>	<b>(*)Out Of Service(Input 12)</b>
0	In. 8	only OUT OF SERVICE
1	Alarm	only OUT OF SERVICE
2	In. 8	OUT OF SERVICE + “FS”
3	Alarm	OUT OF SERVICE + “FS”

**(\*)NOTE:** To activate the input I12 as out of service make sure it is active in the menu 8 (see Table 2)

**Menu 7:** It allows to choose the volume of the buzzer.

- Press seven time the **SELECT** button. Display will visualize the string “M7”.
- Press the **ENTER** button to access the programming menu.  
The digits blink and visualize the actually selected volume:  
With the **SELECT** button is possible to change the volume in a range from 0 to 15.  
**Note:** if it is selected “0”, the buzzer will be disabled.
- Press the **ENTER** button to confirm the choose.  
*The programming procedure is completed and the data are stored.*

**Menu 8:** It allows to choose the type of management of the inputs I8, I11, I12 and I13.

- press eight time the **SELECT** button. Display will visualize the string “M8”.
- Press the **ENTER** button to access the programming menu.  
The digits blink and visualize the actually selected inputs configuration:  
With the **SELECT** button is possible to change the configuration of the inputs (Tab.2).  
Press the **ENTER** button to confirm the choose.  
*The programming procedure is completed and the data are stored.*

<b>Tab. 2</b>	<b>In 11</b>	<b>In 12</b>	<b>In 13</b>
0	GONG	FS	OVL
1	Ing11	FS	OVL
2	GONG	In12	OVL
3	In 11	In 12	OVL
4	GONG	FS	In13
5	In 11	FS	In 13
6	GONG	In 12	In13
7	Ing11	In12	In 13

**NOTE:** Can be used as floor inputs only if it's selected the 1 wire for floor(MENU 2)..

**Menu 9:** It allows to enable/disable the simulation mode.

- Press nine time the **SELECT** button. Display will visualize the string “M9”.
- Press the **ENTER** button to access on the programming menu.  
Pushing **SELECT** button, the digits visualize “NO” which stay for simulation mode “OFF”, “SI” which stay for simulation mode “ON”.
- Press the **ENTER** button to confirm the choose.

The programming procedure is completed and the data are stored.

## MENU SUMMARY

Menu	Range	Default	Description
1	Whichever	-1 ... 9	Assign a characters combination for each selected floor
2	1P –7S – B – Bn-BC	1P	Modify the coding mode used by the board.
3	0 ... 99 minutes	30	Modify the time for the display's back light shutdown
4	-9 ... +9	-1	Assign the value visualized at the first floor. The values visualized at the other floors will be automatically work out by the board
5	1 ... 3	1	Modify the type of gong
6	0 ... 3	0	Modify the management of the input 8 and the type of "out of service" signal visualization
7	0 ... 15	15	Modify the volume of the buzzer (0 = off)
8	0 ... 7	7	Modify the function of the inputs (I11,I12,I13)
9	NO/SI	NO	Enable/Disable simulation mode

**NOTE:** To restore the default values, keep pushed enter button for at least 5 seconds

The board will confirm the restoration of the default values with the string "ME".



Electronic systems for lifts.

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