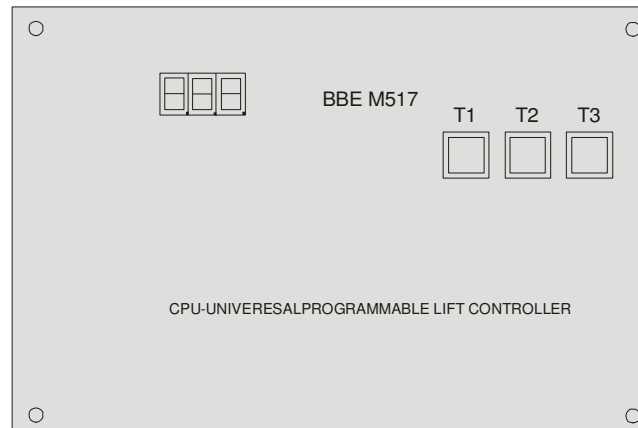




## 1. C.P.U LIFT CONTROLLER – PROGRAMMING AND TEST EDITOR

### 1.1 General Features

The M517 elevator controller has many useful features if compared to its predecessor, besides the capability of controlling a lift with speed up to 6m/s, one can enjoy the statistics menu page as well as a four digit access code to



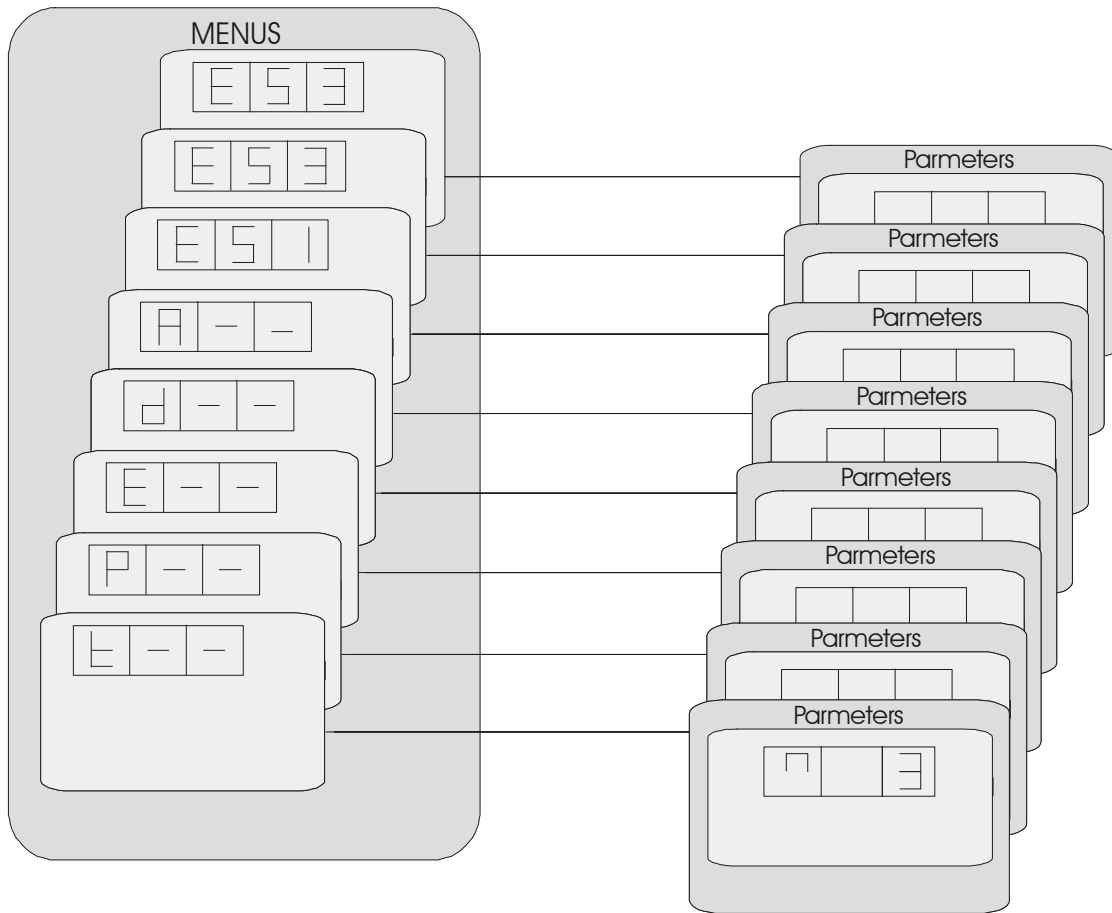
restricted VIP floors. The below table shows all menus that can be accessed and programmed using the three push buttons T1.T2.T3 ,this document will show the test parameters T and the programming parameter P . In addition the M517 can work up to 32 floors in OCTOPLEX operation (eight lifts sharing the same data.

**PICTURE 1**

Menu 1	- <b>T</b> est editor	E	—	—
Menu 2	- Programming of lift <b>P</b> arameters	P	—	—
Menu 3	- Programming of choice ( <b>E</b> )	E	—	—
Menu 4	- Programming of <b>D</b> isplay table	d	—	—
Menu 5	- Programming of call answering ( <b>A</b> )	A	—	—
Menu 6	- Statistics <b>1 (ES1)</b>	E	S	1
Menu 7	- Statistics <b>2 (ES1)</b> – Maximum waiting times	E	S	2
Menu 8	- Statistics <b>3 (ES1)</b> – Average waiting times	E	S	3

In each menu, different parameters are stored (for example the floor and the car direction are parameters on the test box).

PICTURE 2 represents specifically the data organization on the editor. Thus, a menu administration sheet and eight parameters sheets referring to each menu constitute the editor.



**PICTURE 2**

On default, the editor is in the menu of the test editor at parameter t01 where it shows the floor and the lift direction (in the following pictures, this position is represented darkened)



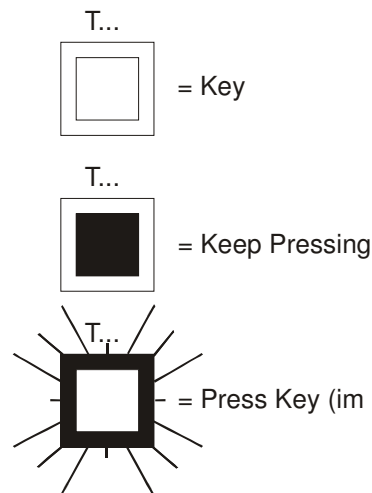
## 1.2 Keyboard Operation

On the main circuit board of the CPU, lift controller, there are three keys that are represented in the serigraphy by T1, T2 and T3.

There are two ways to press the keys:

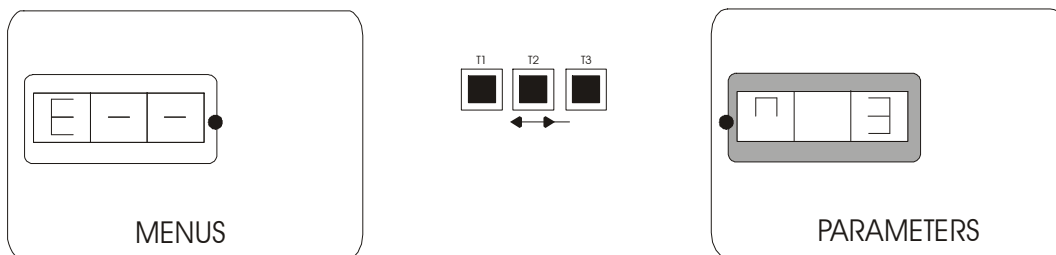
1. Press
2. Keep pressing.
3. Give an impulse.

In the following pictures these two ways to press the keys are represented as it is shown in PICTURE 3



**PICTURE 3**

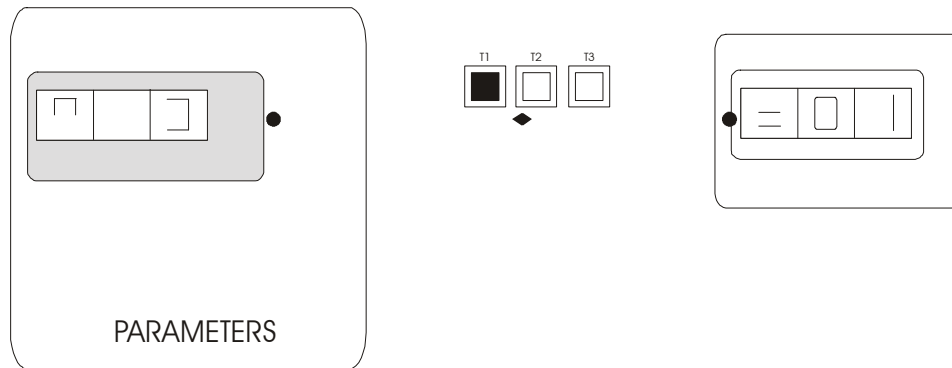
Pressing the three keys simultaneously allows the operator to go in or out of the menu sheet, see PICTURE 4. When changing from menu sheet to parameters sheet, the editor always goes to the first parameter of that menu.



**PICTURE 4**



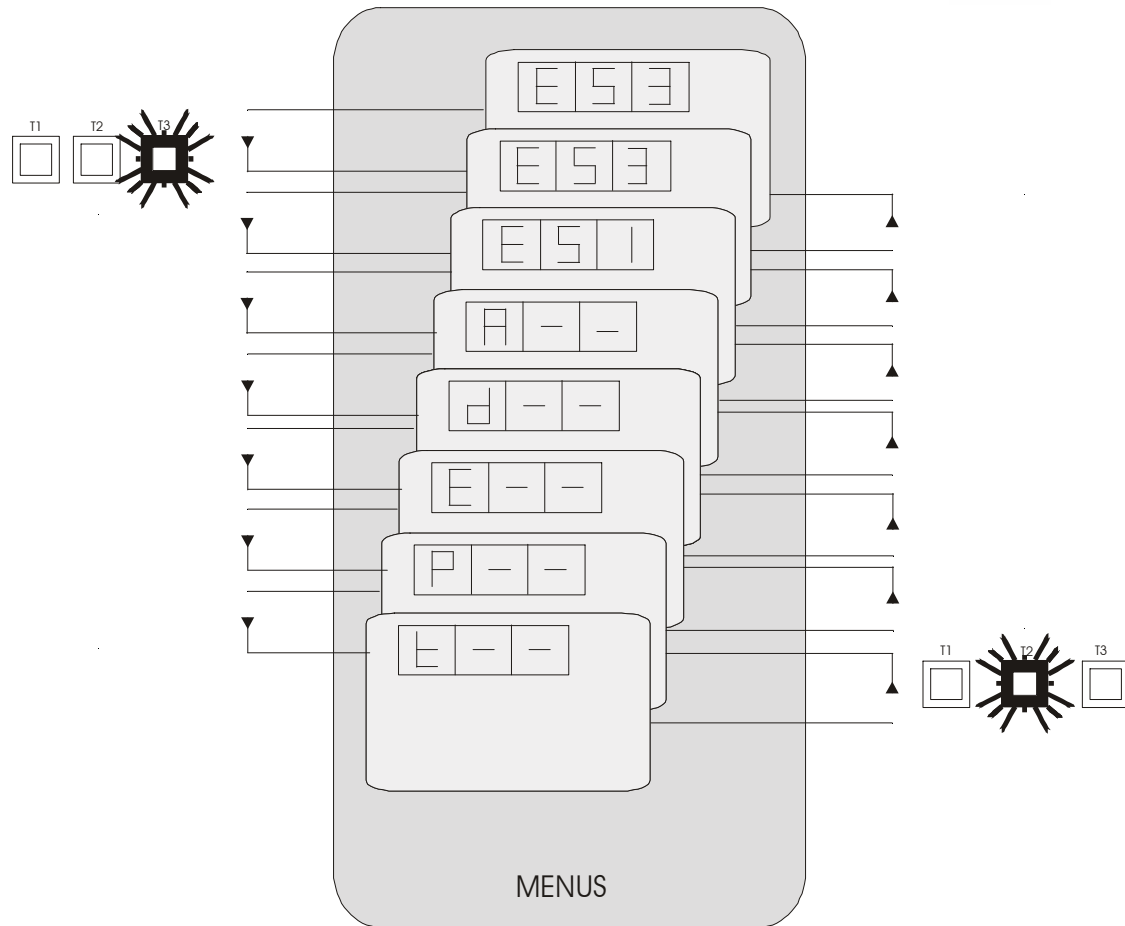
Pressing T1 key let us see the parameter code (PICTURE 5). When you stop pressing the key, the editor goes to the former position. T1 key only works in the sheets of parameter visualization.



**PICTURE 5**

T2 key can be defined as “up” and T3 key as “down”.

If the editor is in the menu sheet, pressing T2 key means going up to next menu and pressing T3 key means going to previous menu (PICTURE 6).



**PICTURE 6**

If the editor is in a programmable parameter, pressing T2 increases and T3 decreases the programmed value (see PICTURE 7).

To visualize another parameter in a menu, the operator must; (see PICTURE 8).

- 1° Press T1 and keep the key pressed.
- 2° Visualize the parameter code.
- 3° Still keeping T1 pressed, press successively T2 to go to next parameter or T3 to go to previous parameter
- 4° When wanted parameter is found, you must stop pressing the keys and the editor display will show the value of that parameter.



### 1.3 Example 1

If the operator wants to see for example: the state of the lift, he must follow procedure 1.

#### PROCEDURE 1:

- 1° look for wanted parameter code. [t02]
- 2° See the menu that this code belongs to. [t--]
- 3° If the operator is not visualizing the menus, then he must press the three keys simultaneously.
- 4° Select through T2 and T3 keys the wanted menu. [t--]
- 5° Press the three keys simultaneously (when entering a specific menu, we always visualize the first parameter of the menu).
- 6° Press T1 and keep the key pressed to visualize parameter code [t01].
- 7° if you want keep pressing the keys until the display shows the wanted parameter.

### 1.4 Example 2

To view a parameter, for example: number of floors and you want to change its value, you must follow procedure 2.

#### PROCEDURE 2:

- 1° Repeat steps 1 to 7 of procedure 1. [Menu – P—code = P02]
- 2° IMPROTANT: Take off JUMPER J1.
- 3° With T2 and T3 keys, increase or decrease parameter value.
- 4° IMPORTANT: Put JUMMPER J1 back on.



Jumper J1 is necessary to protect EEPROM from accidental programming that can put lift out of service. To prevent non-authorized people from changing the program or protect it from external electrical interference to lift controller, it is VERY IMPORTANT to put jumper back on.

## 2. parameter tables of programming and test editor

Menus of editor functioning distribute the following tables. Each menu is divided in parameters with a brief description and commentary for each one.

We want these tables to be worksheets with fast reading.

For further, detailed information, please read document CPU lift controller – technical reference manual

### 2.1 Menu 1 – Test Editor

<b>File: : CPU – T.XLS</b>
<b>Pages: from T1 to T5</b>
<b>Original Date:</b> ___/___/___
<b>Revision A Date:</b> ___/___/___
<b>Revision B Date:</b> ___/___/___
<b>Revision C Date:</b> ___/___/___

#### Note 1:

In the menu of test editor, the operator can visualize 49 test parameters that allow him to have a diagnosis of situations of malfunctioning and to test the good functioning of the lift.

Important, in case of malfunctioning, do not turn the lift off without previous registration of, at least, parameter t02 and parameters from t31 to t49.

MENU			
<b>CODE</b>	<b>Description</b>		<b>Comment</b>
T01	Floor and direction		
T02	Lift state	1	Wrong lift parameter programming (type of command or type of working or type of door)
		2	EPROM Error (wrong version).
		3	Error state of phases fail
		4	Error state of phases sequence
		5	EEPROM Error (back-up)



		6	Internal RAM error (DATA)
		7	External RAM error (XDATA)
		8	MAINTENANCE: Lift in maintenance. To end maintenance you must put the maintenance switch in the normal position and open and close the landing door.
		9	MAINTENANCE: waits for the doors to open to end maintenance
		10	MAINTENANCE: lift in maintenance with march order to go up.
		11	MAINTENANCE: lift in maintenance with march order to go down
		12	MAINTENANCE: lift in maintenance with order to open doors.
		13	MAINTENANCE: lift in maintenance with order to close doors.
		14	MAINTENANCE: lift in maintenance with order to go up or down waiting for the nailing to be done.
		16	TEMPORIZED PROTECTION: the lift had no movement during 18 seconds after being given the march order, it only gets out of this state by disconnecting and switching again the lift.
		17	STUCK SWITCH. Three seconds after the switches and/or frequency variation order being retrieved it did not re-establish the switches close contact series
		18	TEMPORIZED PROTECTION: In re-levelling, the hydraulic lift, get off the doors zone or takes more than 10 seconds to re-level.
		24	STOP SWITCH: Lift stopped by action of the mobile skate.
		25	STOP SWITCH: Lift stopped by action of the STOP switch or of the mobile skate waiting for the doors to open or for cabin registers to go out of immobilization.
		32	RECYCLING: The lift enters in recycling
		33	RECYCLING: The lift waits for conditions to initiate recycling working (security series, of close and of doors nailing and thermal absence.
		34	RECYCLING: Lift in recycling work on the way down.
		35	RECYCLING: Lift in recycling work on the way up
		36	RECYCLING: Limits error in recycling – Simultaneous presence in the superior and inferior limits.
		72	STOPPED: Lift initiates de stopped working
		73	STOPPED: Lift stopped waiting for the nailing series to disappear, if it takes more than the cabin priority time (programmable in P23) entries in recycling working
		74	STOPPED: Transitory state
		75	STOPPED: Lift stopped without attributed calls and with closed door (free)
		76	STOPPED: Lift stopped with open doors
		77	STOPPED: Transitory state.
		78	STOPPED: Stopped lift with the thermal contact entry opened
		80	START: Lift waits for safety series to start.
		88	March: Lift working
		96	REDUCTION: Lift in breaking or in approximation to the floor. Lifts with automatic doors stop only in the doors zone. In the reduction the lift has ten seconds to stop correctly.
T03	Inputs state		
			Connected segment = active input. Be aware that some inputs are inverted, in which been active means command absence, for example preservation, thermal, elastic arm, etc.
T04	Inputs state		
T05	Inputs state		
		1V/2V	Relay1=RLC    Relay2=RGV    Relay3=RS    Relay4=RD Relay5=RCR/RAP    Relay6=RFP    Relay7=RDEF    Relay8= (livre) Relay9=RGONG    Relay10=RFS    Relay11= (livre)



		HIDR	Relay1=RLC Relay2=RGV Relay3=RS Relay4=RD Relay5=RCR/RAP Relay6=RFP Relay7=RDEF Relay8=RNIV Relay9=RGONG Relay10=RFS Relay11=RM
		VF	Relay1=RLC Relay2=RG2 Relay3=RS Relay4=RD Relay5=RCR/RAP Relay6=RFP Relay7=RDEF Relay8=RV1 Relay9=RGONG Relay10=RFS Relay11= RVC
T06	Cabin dispatch		
T07	Landing calls to g up		
T08	Landing call to go down	Connected segment = to send or present call	
T09	Number of impulses read by the impulses Switch on	Important: impulses counting read by the impulses Switch in the way up and down, to lift up to 1 m/s inclusively, or to the impulse Switch on the way up in lifts above 1 m/s	
T10	Number of impulses read by the impulses Switch on	In lifts up to 1 m/s inclusively there is any impulses Switch on the way down being t10 equally t9 to generated internally by the command. To lifts above 1 m/s t10 shows the impulse counting read by the impulses Switch on the way down.	
T11	Number of equipment in bank	In the equipment number equal to zero is used to card test in the factory (place the signalling outputs alternately connected and disconnected).	
T12	Special functioning	0	Any special active regime
		5	FIRE SERVICE: Lift doing return to the main floor (programmed in P16) after the fireman key acting in the main floor.
		6	FIRE SERVICE: Lift In the main floor with open doors.
		7	FIRE SERVICE – With the presence of the fire key in the landing and after the return trip to the main floor the lift stays available to the fire service. The lift stays in fireman service connecting the fireman key in the cabin.
		9	SECURITY AGAINST INTRUSION: Lift doing return to the programmed floor in P19 after the security key acting against intrusion.
		10	SECURITY AGAINST INTRUSION: Lift in the return floor and with closed doors. Only goes out of this state by removing the security key against intrusion. When removing the key it opens the door in that floor.
		12	PARKED LIFT (disconnected) – by the parking key acting the lift answers to the existent cabin sending not answering to any landing calls.
		13	PARKED LIFT (disconnected) – parking key present and lift without cabin sending doing return to the programmed floor in P17.
		14	PARKED LIFT (disconnected) – lift in the parking return floor (P17).
		16	EMERGENCY SERVICE – Lift stopped.
		17	EMERGENCY SERVICE – Lift doing return to the programmed floor in P18.
		18	EMERGENCY SERVICE – Lift stopped in the emergency return floor
		19	EMERGENCY SERVICE – Lift working in emergency
		20	PRIORITY – Lift in landing priority cancels all existing calls and ends the actual trip
		21	PRIORITY – Lift in landing priority answering to the priority call
		22	PRIORITY – Lift in cabin priority cancels existing calls and trip allows the input of one only one cabin Call
		23	PRIORITY – Lift in cabin priority answering to the priority trip



		32	HOSPITAL LIFT BOY – the lift boy key is actuated
		33	HOSPITAL LIFT BOY – lift in direct trip with lift boy key connected
		34	Hospital lift boy – lift only answers landing calls to go up
		35	HOSPITAL LIFT BOY – Lift only answers landing calls to go down
T13	Cabin dispatch		
T14	Landing calls inputs to go up		
T15	Landing calls inputs to go down		Connected segment sending or call switch pressed. Useful to test switches and its connections
T16	Choice type	0	Answers landing calls on the way up and down
		1	Only Answers landing calls on the way down (answer to a computer command)
		2	Answers landing calls on the way up (answer to a computer command)
		3	Does not answer landing calls. Lift unavailable to answer landing calls in the following cases: lift state less than 72 (nor normal), engine Thermal Switch, doors open at more than 30 sec. Or any special service (ex: fire).
T17			
T18			
T19			
T20	Equipment communication state	0	Communications directed by another bank equipment
	bank	Equipment number in the bank	This equipment directs the communications of all the equipment in the bank, <b>IMPORTANT:</b> in each bank it may only exist an Equipment defined in this manner. More than an equipment to direct the communications means communication fault or number of equipment bad programmed.
T21	Communications errors with equipment 1	Value from 0 to 255	Value to increase Between 10 to 15 units by second not existing communication with that equipment. One to two errors by minute do not have any meaning. More than this it is necessary to search the communication fault causes.
T22	Communications errors with	Value from 0 to 255	
T23	Communications errors with	Value from 0 to 255	
T24	Communications errors with	Value from 0 to 255	
T25	Communications errors with	Value from 0 to 255	
T26	Communications errors with	Value from 0 to 255	



T27	Communications errors with	Value from 0 to 255	
T28	Communications errors with	Value from 0 to 255	
T29			
T30			
T31	Last occurrences register	1	Error in the programming table of the lift parameters (XDATA).
		11	Command card has done "reset"
		12	The preservation state has passed to recycling
		13	Is has not undone nailing in the stop working. Doors do not open, for example due to a switchers problem or in the doors engine or fault of doors location
		14	Attempts to reopen and close doors (each 60 seconds)
		18	Securities fault during recycling
		22	Waits doors open to get out of preservation
		23	Thermal engine protection input in preservation working
		24	Thermal engine protection input in normal functioning
		26	Functioning by UPS. Begin of the hydraulic emergency engine working
		27	Functioning by UPS. Hydraulic emergency engine working
		28	Functioning by UPS. End of the hydraulic emergency engine working
		32	Temporized protection in recycling in the way down
		33	Temporized protection in recycling in the way up
		34	Temporized protection with lift in march (normal functioning)
		36	Error of phases fault
		37	Error of phases inversions
		38	Pasted switcher
		39	Immobilization switch or mobile skate enabled
		42	Inferior limit in start
		43	Superior limit in start
		44	Inferior limit in march
		45	Superior limit in march
		46	Inferior limit in stopping
		47	Superior limit in stopping
		48	Velocity reduction switchers simultaneous presence in the way up and down.
		50	Wrong type of display parameterization
		51	Security faults in march
		52	Security faults in march
		53	Overtime to do approximation to the floor (more than 10 seconds)
		55	Parameterization of the command type out of limits
		56	Parameterization of the main floor out of limits
		57	Parameterization of the equipment number in the bank out of limits
		58	Parameterization of the assigning type out of limits
		59	Parameterization of the arrows type out of limits
		60	Parameterization of the doors type out of limits
		80	Incompatibility between next floor and sense with the lift stopped
		100 a 131	Cabin sending switch or landing calls of the floor xx pasted code 100=floor switch 0.....to.....code 131=floor switch 31.



T32	Former to register t31		Same codes than t31
T33	Former to register t32		
T34	Former to register t33		
T35	Former to register t34		
T36	Former to register t35		
T37	Former to register t36		
T38	Former to register t37		
T39	Former to register t38		
T40	Former to register t39		
T41	Former to register t40		
T42	Former to register t41		
T43	Former to register t42		
T44	Former to register t43		
T45	Former to register t44		
T46	Former to register t45		
T47	Former to register t46		
T48	Former to register t47		
T49	Former to register t48		

## 2.2 Menu 2 – Programming of Lifts Parameters



**File: : CPU – P.XLS**

**Pages: from T1 to T3**

**Original Date:** \_\_\_/\_\_\_/\_\_\_  
**Revision A Date:** \_\_\_/\_\_\_/\_\_\_  
**Revision B Date:** \_\_\_/\_\_\_/\_\_\_  
**Revision C Date:** \_\_\_/\_\_\_/\_\_\_

**Note 2:**

To start lift operation (even to operate during revision), it is necessary to, at least, program correctly parameters from P03 to P09 of this menu

**IMPRTANT**, program correctly all the parameters so that the lift works well.

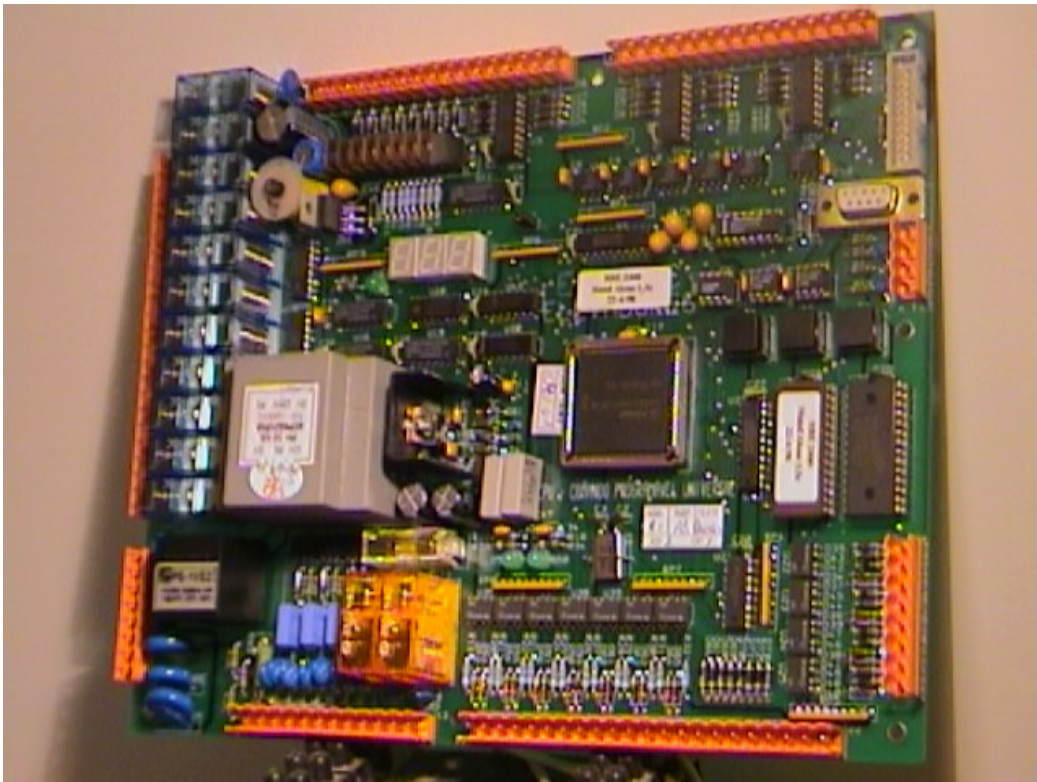


Pxx	Description	comments	Values Break	Factory Program	Installation Program
P01	Bank equipment number	N° of equipment equal to 0 is used to test de board in the factory. IMPORTANT: in a bank all equipment's must have a different number	From 0 to 8	1	
P02	Floor number	Equal to the access N° in simple equipments. In a bank is equal to the bank N° of access	From 1 to 32	4	
P03	Command type	Configures the local landing calls inputs and cabin sending signalling, landing calls and arrows  0 = selective collective on the way down without arrows 0 = selective collective on the way down with arrows 0 = selective collective on the way down and up	From 0 to 2	0	
P04	Drive type	Configures the output by relays on the base board  0 = one velocity 1 = two velocities 2 = hydraulic 3 = frequency variation one velocity 4 = frequency variation two velocities	From 0 to 4	1	
P05	Doors type	0= without door in the cabin and semiautomatic in the landing 1 = automatic in the cabin and semiautomatic in the landings, with doors board 2 = automatic in the cabin and in the landings, with doors board 3 = automatic in the cabin and semiautomatic in the landings, without doors board 4 = automatic in the cabin and in the landings, with doors board	From 0 to 4	3	
P06	Recycling authorization on the way down	If 0 in the recycling on the way down does not open doors in the inferior floor, and does a new recycling on the way up, if equal to 1 authorizes the recycling	From 0 to 1	1	
P07	Equipment inferior floor (crippled floors with bank)	In lifts banks on which one of them has the lower floor different of the installation = floor, for that equipment it is necessary to program on that position the no of its lower floor referring to the bank	From 0 to 4	0	
P08	N° of impulses on the passage by the set referring to the way up impulses Switch	For driving type 0, 1, 2 and 3 P08 must be equal to P09. For driving type 4, P8 may be different from P9.	From 0 to 128	2	
P09	N° of impulses on the passage by the set referring to the way	For driving type 0, 1, 2 and 3 P09 must be equal to P08. For driving type 4, P9 may be different from P8. This parameter is only important in the programming of a; VF 2V equipment.	From 0 to 128	2	



	down impulses Switch				
P10	Display type	<p>0 = multiplexed 7x2 (2 digits of 7 segments). Display programming by floors is done in d— attributing a code for each floor, to which corresponds a message according to the attached table on menu d—</p> <p>1 = binary. The presented value on the outputs to display command is the floor binary code where the equipment is. Example, to floor 0 corresponds on the outputs to the binary digit the value 1. Lift disconnected or out of service the value is 0.</p> <p>2 = programmable code. On the outputs to the display it comes out a value in binary code (non multiplexed) from 0 to 127 programmable floor by</p>	From 0 to 2	0	
P11	Arrows type	<p>0 = approximation arrows</p> <p>lift in march – erased arrows</p> <p>lift in approximation or to the floor with a defined sense = sense arrow of that floor lighted.</p> <p>Lift stopped to the available floor = both arrows of that floor lighted.</p> <p>1 = attendance arrows</p> <p>lift in march = sense arrow in all floors lighted</p> <p>lift in approximation or to the floor wit a defined sense = sense arrow of that floor blinking on the other floors sense arrow lighted.</p> <p>Lift stopped in the available floor – both arrows of that floor lighted</p>	From 0 to 1	1	
P12	Existence of an expansion board for additional functions	If equal to 1, one of the expansion boards in the main board does not add floors to the command but places in functioning functions as: emergency service, hospital lift boy and connection to centralized technical management by dry contacts.	From 0 to 1	0	
P13	No. of expansion boards	Total No of expansion boards existent in the main board	From 0 to 8	0	
P14	Equipment number on the building	For Tele-maintenance purposes or connection to a PC in a centralized way (MCC or WINMCC).	From 1 to 32	1	
P15	Equipment number in the emergency chain (start time after	If useful to resolve the emergency equipment's, even of different banks. We must point out, that this No. Influence also the lift start up time to recycle. Recycling start time = 3 + No of emergency equipment x 3. Used to avoid the simultaneous start up of	From 0 to 32	1	





M517V1