

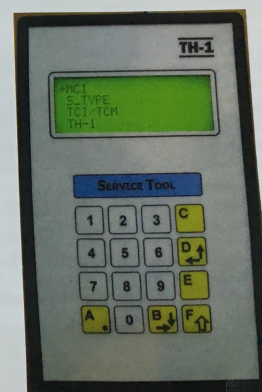
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## 1 Introduction

The diagnostic tool TH-1 enables the trouble-shooting of some microprocessor lift controllers (such as MCI, TCI/TCM, etc).

The following image shows the TH-1 tool after being connected to a lift controller, showing its main menu.



**Image 1.** – Front view

The TH-1 has a data lead (ended with a DB-9 connector) in order to connect to the lift controller. For some types of lift controllers, it also needs a special adapter, named "TCI interface".

### 1.1 Keypad

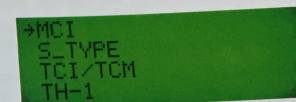
It has a keypad with 16 keys, which correspond with the decimal digits 0..9 and with the hexadecimal characters A..F for the special functions.

The keys with special functions are:

<b>C</b>	Corrects last entry. Indicates the hexadecimal value of "C" (12).
<b>D</b> ↗	Moves up (↑) or left (←) along the menus. Indicates the hexadecimal value of "D" (13). Increases the index of the selected function.
<b>B</b> ↘	Moves down (↓) or right (→) along the menus. Indicates the hexadecimal value of "B" (11). Decreases the index of the selection function.
<b>E</b>	Validates the Keyed-in data. Indicates the hexadecimal value of "E" (14). Enters into the selected function.
<b>F</b> ↗	Indicates the hexadecimal value of "F" (15). Selects "capital letters" mode. When the required function number is known, it asks for the function number.
<b>A</b> .	Quits a sub-menu or the menu (A=Abort). Access the list of functions (Help). Indicates the hexadecimal value of "A" (10). Introduces the "decimal dot" (required in some parameters).

### 2 Main menu

When the TH-1 Diagnostic tool is plugged into the lift controller, it will power-up and after a few seconds, it will show its main menu.



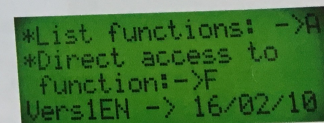
**Image 2** – Example of a TH-1 tool showing its main menu

The main menu has more entries than it can show at once, and therefore, the user must move up and down along the menu using the keys D(↑) and B(↓), in order to select the type of lift controller.

Once selected, press the key E to enter into its associated sub-menu.

### 3 Sub-menu

Once the user has entered into the sub-menu of the selected lift controller, the TH-1 tool will show the following screen most of the times (except with the MCI controller).



**Image 3** – Sub-menu



If the user doesn't know the functions offered in the sub-menu, press the key A (Help), in order to access the list of the available functions.

- Using the keys B(↓) y D(↑), the user can select the selected function shown in the display.
- Press the key E in order to select the function shown in the display.

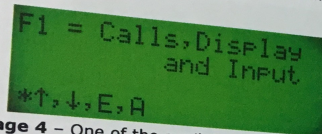


Image 4 – One of the available functions shown

Once the user has entered into the selected function, by pressing the key "A", the TH-1 tool will return into the functions list.

If the user knows in advance the function to execute, by pressing the key F, the TH-1 tool will show a screen asking for the function number to execute.

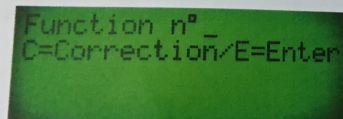


Image 5 – TH-1 tool asking for the function number to execute.

The user writes the number of the function to execute and then presses the key E to validate it and execute it. If the user needs to correct any pressed key, the key "C" can be used.

#### 4 MCI Controller

In order to trouble-shoot this type of lift controller, the TH-1 is directly connected to the controller using its data-lead.

The behaviour of the TH-1 tool with the MCI is different from the others after selecting the MCI entry in the main menu.

In this case, the TH-1 tool initiates communication to the lift controller board and shows the following screen.



Image 6 – TH-1 tool initiating communication to MCI controller.

After a successful communication, the TH-1 will show a screen with general information and the status of the lift controller.

##### 4.1 Function List

The available functions for the MCI controller are:

- **F1** : Calls display and input (Display of car in the shaft).
- **F2** : Display of fault list.
- **F3** : Display of car contacts.
- **F4** : Display of memories and modification if allowed.
- **F5** : Display of PROM options (characteristics & variants of the controller).

- **F6** : Simulation of automatic calls.
- **F7** : Display of the state of lift.
- **F8** : Software version, lift number and run counter.
- **F12** : Display of mother board inputs/outputs.
- **F13** : Display/Modification of vanes.
- **F14** : Display / Modification of level indicators.
- **F15** : Display / Modification of parameters.

## 5 S Type Controller

This is an old AUTINOR lift controller which is not currently supported by the hardware version of the TH-1 tool.

Although the software version (due to compatibility issues) includes one entry for this type of controller, its troubleshooting is not possible with the current hardware.

## 6 TCI/TCM Controllers

In order to connect to this type of lift controller, the TH-1 tool requires a special adaptor named "TCI Interface" (shown in the next image).



**Image 7** – Interface TCI adaptor.

The data-lead of the TH-1 tool is plugged into the DB-9 connector of the TCI Interface, and the other 2 connectors (a DB-25 and a DB-20) must be plugged into the TCI/TCM controller board.

### 6.1 Function List

The available functions for the TCI/TCM controller are:

- **F1** : Display and inputs of calls.
- **F2** : Display of fault stack.
- **F3** : Display of car sensors.
- **F4** : Display and writing (if authorized) in memories.
- **F5** : Display of PROM options (characteristics & variants of the controller).



- **F6** : Simulation of automatic calls.
- **F7** : Display of lift status.
- **F8** : Software version.
- **F9** : Display of safety circuit chain.
- **F10** : Display of locking contacts.
- **F11** : Teach-in modification of parameters.

## 7 TH-1 Menu

The TH-1 tool has one entry in the main menu for its internal use.

There is only one function available in this menu entry, which enables the user to read the serial number of the TH-1 unit. This serial number also appears in label located in the back side of the unit.

## 8 TCI DECODE Board

This is an old board which is not currently supported by the hardware version of the TH-1 tool.

Although the software version (due to compatibility issues) includes one entry in the main menu for this type of board, its use is not possible with the current hardware.

## 9 EGIDE

The TH-1 tool enables the trouble-shooting of the EGIDE electronic access control board by directly connecting its data-lead to the DB-9 connector in the board.

### 9.1 Function List

The available functions for the EGIDE board are:

- **F1** : Display and modification of parameters.
- **F2** : EGIDE display and modification.
- **F3** : Display and modification of keys.
- **F4** : Display and modification of time slices.
- **F5** : Display and modification of clock.

## 10 VF:16c, API, D6C, TSA

The TH-1 enables the trouble-shooting of some frequency variation regulators by idirectly connecting its data-lead to the DB-9 connector in the regulator (for example, the isotop 60 8-bit speed control, isotop 60 16 bits, VF 16c speed control).

### 10.1 Function List

The available functions for the VF regulators are:

- **F1** : Modification of authorized parameters.
- **F2** : Display of indication parameters.
- **F3** : Safeguard of parameters.

- **F4** : Loading of factory values.
- **F5** : Display of the fault list.
- **F6** : Deletion of the fault list.
- **F7** : Display of the software version.
- **F8** : Display of the operation time of service.

## 11 JBUS

The TH-1 also enables the trouble-shooting of the JBUS board (used sometimes along with the MCI controller board).

In order to connect to this board, the TH-1 tool requires a special adaptor named "TCI Interface" (as shown in the image 7).

### 11.1 Function List

The available functions for the JBUS board are:

- **F1** : Display and modification of parameters.
- **F2** : Read and write in memory.

## 12 Decimal – Hexadecimal conversion chart

00 00	43 2B	86 56	129 81	172 AC	215 D7
01 01	44 2C	87 57	130 82	173 AD	216 D8
02 02	45 2D	88 58	131 83	174 AE	217 D9
03 03	46 2E	89 59	132 84	175 AF	218 DA
04 04	47 2F	90 5A	133 85	176 B0	219 DB
05 05	48 30	91 5B	134 86	177 B1	220 DC
06 06	49 31	92 5C	135 87	178 B2	221 DD
07 07	50 32	93 5D	136 88	179 B3	222 DE
08 08	51 33	94 5E	137 89	180 B4	223 DF
09 09	52 34	95 5F	138 8A	181 B5	224 E0
10 0A	53 35	96 60	139 8B	182 B6	225 E1
11 0B	54 36	97 61	140 8C	183 B7	226 E2
12 0C	55 37	98 62	141 8D	184 B8	227 E3
13 0D	56 38	99 63	142 8E	185 B9	228 E4
14 0E	57 39	100 64	143 8F	186 BA	229 E5
15 0F	58 3A	101 65	144 90	187 BB	230 E6
16 10	59 3B	102 66	145 91	188 BC	231 E7
17 11	60 3C	103 67	146 92	189 BD	232 E8
18 12	61 3D	104 68	147 93	190 BE	233 E9
19 13	62 3E	105 69	148 94	191 BF	234 EA
20 14	63 3F	106 6A	149 95	192 C0	235 EB
21 15	64 40	107 6B	150 96	193 C1	236 EC
22 16	65 41	108 6C	151 97	194 C2	237 ED
23 17	66 42	109 6D	152 98	195 C3	238 EE
24 18	67 43	110 6E	153 99	196 C4	239 EF
25 19	68 44	111 6F	154 9A	197 C5	240 F0
26 1A	69 45	112 70	155 9B	198 C6	241 F1
27 1B	70 46	113 71	156 9C	199 C7	242 F2
28 1C	71 47	114 72	157 9D	200 C8	243 F3
29 1D	72 48	115 73	158 9E	201 C9	244 F4
30 1E	73 49	116 74	159 9F	202 CA	245 F5
31 1F	74 4A	117 75	160 A0	203 CB	246 F6
32 20	75 4B	118 76	161 A1	204 CC	247 F7
33 21	76 4C	119 77	162 A2	205 CD	248 F8
34 22	77 4D	120 78	163 A3	206 CE	249 F9
35 23	78 4E	121 79	164 A4	207 CF	250 FA
36 24	79 4F	122 7A	165 A5	208 D0	251 FB
37 25	80 50	123 7B	166 A6	209 D1	252 FC
38 26	81 51	124 7C	167 A7	210 D2	253 FD
39 27	82 52	125 7D	168 A8	211 D3	254 FE
40 28	83 53	126 7E	169 A9	212 D4	255 FF
41 29	84 54	127 7F	170 AA	213 D5	
42 2A	85 55	128 80	171 AB	214 D6	



ASCII Characters

ASCII	Hex Value	ASCII	Hex Value	ASCII	Hex Value
space	20	A	41	b	62
!	21	B	42	c	63
"	22	C	43	d	64
#	23	D	44	e	65
\$	24	E	45	f	66
%	25	F	46	g	67
&	26	G	47	h	68
'	27	H	48	i	69
(	28	I	49	j	6A
)	29	J	4A	k	6B
*	2A	K	4B	l	6C
+	2B	L	4C	m	6D
,	2C	M	4D	n	6E
-	2D	N	4E	o	6F
.	2E	O	4F	p	70
/	2F	P	50	q	71
0	30	Q	51	r	72
1	31	R	52	s	73
2	32	S	53	t	74
3	33	T	54	u	75
4	34	U	55	v	76
5	35	V	56	w	77
6	36	W	57	x	78
7	37	X	58	y	79
8	38	Y	59	z	7A
9	39	Z	5A	{	7B
:	3A	[	5B		7C
;	3B	\	5C	}	7D
<	3C	]	5D	~	7E
=	3D	^	5E		
>	3E	_	5F		
?	3F		60		
@	40	a	61		