

Read attentively before use!

ELOTYPE 4/4E

Operating manual

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The ELOTYPÉ 4 is an electronic braille. It is equipped with a wide variety of interfaces to provide a maximum of versatility for the operator. Therefore the ELOTYPÉ is offered in two versions to enable the user to select the model with the applications that best suit her or his needs.

Basic version: ELOTYPÉ 4

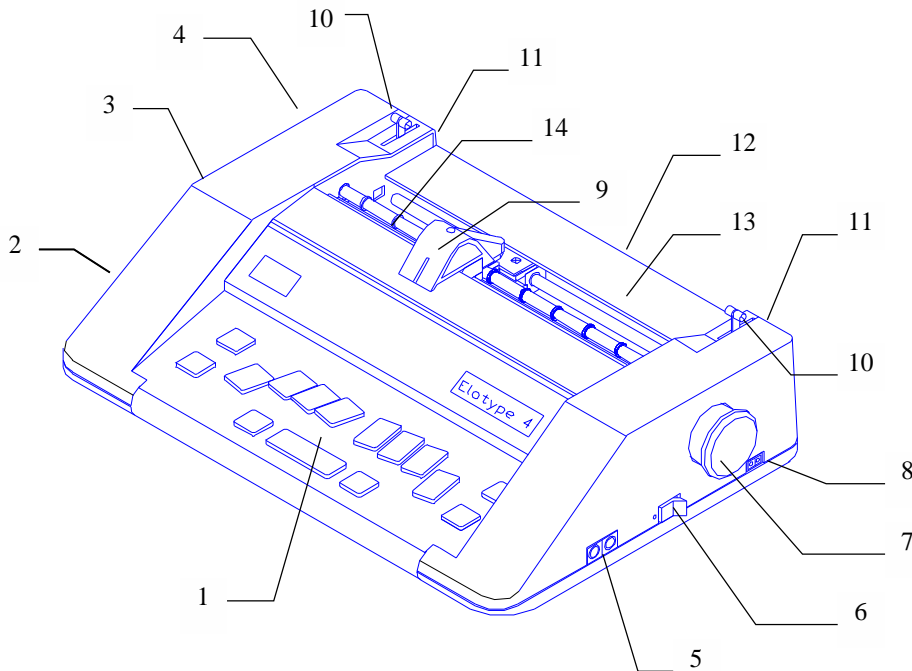
- Braille typewriter
- Braille printer
- Communications system between blind and sighted persons

Extended version: ELOTYPÉ 4E

Same as basic version plus extended functions:

- Text memory with text editor
- Printer for tactile graphics
- Communications system for deaf blind persons
- or student - teacher groups

1. Operating elements of the ELOTYPÉ



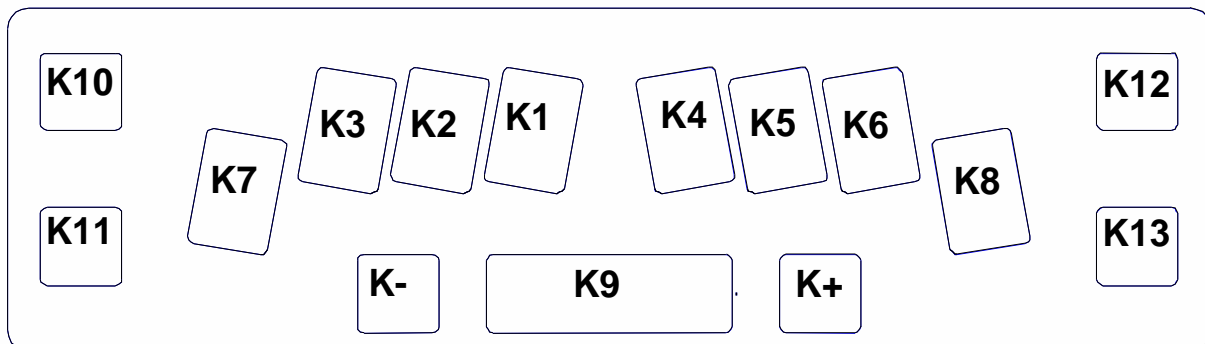
Position

- 1 keyboard
- 2 Parallel interface
- 3 RS 485 bus
- 4 RS 232 serial port
- 5 MF2 keyboard and earphone/vibrator sockets
- 6 Power switch
- 7 Manual paper feed wheel

Position

- 8 Power input
- 9 Embossing head
- 10 Platen levers
- 11 Tractor slot
- 12 Paper feed entry
- 13 Reading table
- 14 Platen

1.1. The keyboard



1.1.1. The keys and their basic functions

- K1 – K6** Keys K1 – K6 are assigned to the braille dots 1 through 6. When pressing these keys, a braille character is embossed. The character is embossed only after the last key of a dot combination is released.
- K7** K7 alone is the tab key. Press this key to move the embossing head to the next tab position. K7 plus at least one of K1 to K6 embosses those dots plus dot 7 in 8-dot braille. Press K7 together with K-, K+ or K9 to emboss only dot 7. **Note:** 8-dot braille must be selected (see 2.2. "List of commands in typewriter mode).
- K8** K8 alone is the Carriage Return / Line Feed key. Press this key to move the embossing head back (pos. 9) to the next line start. K8 plus at least one of K1 to K6 or K7 embosses those dots plus dot 8 in 8-dot braille. Press K8 together with K-, K+ or K9 to emboss only dot 8. **Note:** 8-dot braille must be selected (see 2.2. "List of commands in typewriter mode).
- K9** Space bar: When writing in braille, press this key to leave spaces between the words.
- K10** Paper forward-feed key: Press this key to move the paper forward to the next line position.
- K11** Paper backfeed: Press this key to move the paper back to the previous line position.
- K12** Backspace key: In the basic version, press this key to move the embossing head one character backward towards the line start (same function as K- in the basic version). K12 has a special function in the extended version (see 6.1.).
- K13** Margin release key: If the embossing head is on the margin, the margin stop is released by pressing K13, and you can write beyond the margin. After pressing K13 at the beginning of the line, the embossing head can be moved beyond the margin using keys K12 or K-.
- K+** Moves the embossing head forward by character towards the end of the line (same function as space key K9 in the basic version).
- K-** Moves the embossing head backward by character towards the line start (same as K12 in the basic version).

1.2. The interfaces

Parallel interface and serial interface RS 232:

To connect a PC or an ink-print printer to the ELOTYPÉ 4, a parallel interface (Pos. 2) and a serial interface (Pos. 4) are available. Both interfaces can send and receive ASCII characters. The serial interface parameters cannot be changed (9600,n,8,1). See Chapter 9.

Position 3 in the drawing marks an interface socket used in the ELOTYPÉ 4E to link several machines together in a network. This interface is not active in the basic ELOTYPÉ 4.

MF-2 keyboard input / Earphone or vibrator socket:

For a communications system, connect an MF-2 keyboard to the ELOTYPÉ 4 using either of these two sockets (Pos. 5). Both work in parallel. Both audio signals (e.g. end of line, end of paper) and characters are transferred to both sockets. Audio signals can be heard on an earphone or felt using a special vibrator (e.g. for deaf-blind users). The sockets automatically send keyboard signals if a keyboard is connected, and audio if earphones or a vibrator are connected.

2. The ELOTYPÉ 4 as a braille typewriter

2.1. Set-up:

Connect the power adapter to the power input (Pos. 8). Connect mains plug to a 220V to 240V socket. After switching on by tilting the power switch (Pos. 6) forward towards the dot marking, the embossing head moves to the left margin and stops.

When the power-on routine is finished, the ELOTYPÉ plays a sound. Now you can insert paper and define the upper margin by pressing K9.

To insert paper, pull levers (Pos. 10) on the platen (Pos. 14) forward towards the keyboard.

The paper is inserted from the back of the ELOTYPÉ into the paper feed slot until it appears under the embossing head and you can adjust it parallel to the far edge of the reading table (Pos. 13). The paper must be adjusted to the left side of the ELOTYPÉ 4. When inserting paper, a positive sound (rising scale) is played. After adjusting the paper, push platen levers backwards.

Important: after inserting paper, you must first press K9 so the machine knows the paper has been positioned at the top line under the embossing head. When K9 is pressed, the machine plays an audio signal. Until then, the keyboard is blocked!!

Now you can type text in braille using the keys K1 to K6, K7, and K8 which are assigned to appropriate braille dots, and the space bar, K9.

2.2. Additional typewriter functions of the ELOTYPÉ 4

Besides the general functions described above, the ELOTYPÉ 4 has some additional capabilities which can be invoked to facilitate work. In detail, these are:

- Set and delete tabs
- Change left/right margins
- Set line spacing to 7.5 mm, 10 mm or 12.5 mm
- Select 6- or 8-dot braille system
- Set margin where "end of line" warning sounds
- Adjust sound volume
- Switch to different modes (e.g. printer).

Since the number of keys on the ELOTYPÉ 4 is limited to avoid cluttering, these functions are activated using key combinations.

All commands to the ELOTYPÉ 4 are preceded by a command call.

Command call means the keys K1 to K6 assigned to braille dots 1 to 6 are pressed while holding down the space bar K9. After releasing the keys, the ELOTYP 4 accepts the input with a positive audio signal and interprets the next input as a command, which is accepted with another positive sound if it is recognised as a correct command.

The command call is shown as a **hash #** in this operating manual. (Therefore, # means: press K1; K2; K3; K4; K5; K6; and K9 at the same time and release.) Several keys in a command, e.g. # K13 K+, following the command call must be pressed after one another.

List of commands in the typewriter mode

<u>Functions</u>	<u>Input</u>	<u>Procedure</u>
Set Tab	# K7	Move embossing head to desired position using K+ or K9; then enter command.
Delete Tab	# K7	Go to Tab using K7; then enter command.
Set right margin	# K13 K+	Position embossing head on desired right margin; delete old margin with K13 if necessary. After positioning the embossing head, for example with K9, enter command.
Set left margin	# K13 K-	Position embossing head on desired margin, delete old margin with K13 if necessary. After positioning the embossing head, for example with K-, enter command.
Adjust sound volume	# K9 (K8)	Enter command call #, then hold down K9 until the desired volume is reached. Then close with K8.
Set line spacing	# 1, # 2 or # 3 ^{1*}	1 sets line spacing 7.5 mm, # 2 10 mm, # 3 12.5 mm.
Adjust margin warning sound	# K13 K12	Position embossing head where you wish the margin warning signal to ring; then enter command.
Adjust paper length setting	# K12 xx	For endless paper, set lengths in 1" steps between xx=08 and xx=13. For arbitrary length of single sheets, set xx=00.
Paper feed	# K8	Moves paper to the beginning of the next page.
Toggle Repeat on / off repeat	# K10	While repeat is on, a character is embossed repeatedly when you hold keys down for more than 0.8 sec. Press # K10 again to switch off.
Toggle CR/LF on/off	# K11	This command switches the automatic carriage return function with paper feed on/off.
Switch to printer mode	# d ^{1*}	Sets the ELOTYP 4 to printer mode.
Switch to typewriter mode	# s ^{1*}	Sets the ELOTYP 4 to typewriter mode.
Switch from 8- to 6-dot braille	# 6	This command causes the ELOTYP 4 to print out only 6-dot braille, whatever mode is set.
Switch from 6- to 8-dot braille	# 8 ^{1*}	This command causes the ELOTYP 4 to print out 8-dot braille, also, whatever mode is set.

The ELOTYP 4E offers further operating modes, such as editor, network, and graphics, which are also called via command codes and are described further below.

^{1*} For digits and letters in German computer braille, refer to chapter 10. - Technical data.

Remember:

- a) When you switch off and on the ELOTYPÉ 4 with the power switch (Pos. 6), all "personal" settings, such as tab settings, left and right margins, line spacing, beginning of margin warning sound, sound volume, repeat function on/off, and line spacing, settings remain stored in memory. However, each time you switch on, you need to press K9 to mark the first line.
- b) After inserting a new sheet of paper, always press the space bar K9 when you have positioned the embossing head on the top margin! The ELOTYPÉ waits for this information and the keyboard remains locked until K9 is pressed.
- c) Before reaching the end of a page, the ELOTYPÉ plays a distinct signal at the end of the last-but-one line / beginning of the last line. (See chapter 3.1.1. if you are using endless paper).
- d) If you move the embossing head by hand to read what you have just written, it automatically repositions itself on the next character when you continue typing.

3. The ELOTYPÉ 4 as a Braille printer

While in typewriter mode, press # d to switch the ELOTYPÉ to printer mode. An audio signal is played. Writing from the braille keyboard or an attached keyboard is disabled now, but the space bar K9 is still active for marking the top of the page, or interrupt and restart printing. You can connect the ELOTYPÉ 4 to a PC or laptop as a serial printer using the serial interface to a COM port.

3.1. Set-up

3.1.1. Tractor / Endless paper

Insert tractor for endless paper into slots on the back of the machine. The side of the tractor with a small casing and cogwheel is fixed on the left side of the machine.

Open tractor hatches, then insert paper into feed from behind and place over tractor wheels, inserting tractor teeth. Then close tractor hatches. Transport paper manually with the manual feed wheel (Pos. 7) until the embossing head is just on the beginning of the first page. Now press the space bar (K9) to mark the beginning of the page and prevent embossing on the perforation. The ELOTYPÉ locks the keyboard until this command is entered. The machine is now ready to receive data.

3.1.2 Additional settings

Before switching the ELOTYPÉ 4 to printer mode, the following settings should be entered in typewriter mode:

- Left and right margins
- Line spacing
- Sheet length for endless paper
- ASCII-braille-table (see chapter 4.)
- 6- or 8-dot braille

3.2. Embossing operation

When the ELOTYPÉ 4 is connected to a PC or laptop via the serial (RS 232) or parallel interface, text stored in the PC can be sent to the ELOTYPÉ. The characters must be transferred to the ELOTYPÉ 4 as ASCII code. The ELOTYPÉ 4 will convert ASCII to braille and emboss it. You should finish these preparations before printing: While printing, the ELOTYPÉ controls left and right margins and sheet length. In case no end-of-line character (CR/LF) is present in the text or the lines are longer than the

ELOTYPÉ's settings, a carriage return is inserted at the end of the line and embossing continues on the next line. Therefore, for best printouts it is important to make sure the line length settings of the text and the ELOTYPÉ are identical.

For printing from an MS-DOS text editor, no further preparations are necessary. In an MS-DOS word processor, select the "text only" printer driver. Alternatively, you can save your text as an ASCII file and print it on the ELOTYPÉ with any of the following DOS commands PRINT, COPY or TYPE and the interface usually LPT1: or COM1: (e.g. copy mytext.txt com1: [return])

For printing textfiles from a PC with a Windows operating system, you will first have to set up a "Generic / Only Text" printer driver. Tips on how to set up an appropriate printer driver and its use with the ELOTYPÉ will be given later in this manual in section "Appendix".

3.3. Commands available in embossing mode

<u>Command</u>	<u>Command code</u>	<u>Comment</u>
Interrupt printing	K9	Pressing the space bar K9 stops continue printing the same pressing starts the printing. To interrupt printing process press K8 after stopping the continue print,
Start printing again	K9	
Form feed	# K8 ^{1*}	Transports paper to beginning of next page.
select typewriter mode / leave printer mode	# s	The ELOTYPÉ leaves printer mode and returns to typewriter mode.

^{1*} In a structured text, the ELOTYPÉ 4 allows to perform a Form Feed using the ASCII character 0C hex.

Remember:

During printing, the functions of all keys are blocked. Only K9 is active for interrupting. While printing is interrupted, only the above commands can be entered from the braille keyboard.

Please note that when printing is interrupted, pressing K8 to abort will clear the printing buffer!

4. ASCII-braille Tables

Communication between the ELOTYPÉ and a PC or an ink-printer via the available interfaces relies on ASCII characters. If an external keyboard is connected, keyboard codes are converted into language-specific braille signs (such as umlauts ä, ö, ü etc.). Several language-specific ASCII-braille tables are stored in the ELOTYPÉ.

4.1. Selecting ASCII-braille Tables

A table can be loaded with the command # & xx, where & is composed of the keys K1, K2, K3, K4, and K6, and xx is the phone country code.

<u>Language</u>	<u>Command</u>	<u>Language</u>	<u>Command</u>
German	#&49	Dutch	#&31
French	#&33	Portuguese	#&35
American	#&01	Italian	#&39
English	#&44		
Spanish	#&34	Eurobraille	#&98
Slovenian	#&38	Customer Table	#&99

means: Press keys K1, K 2, K3. K 4, K 5, K 6 and K9 at the same time.

& means: Press keys K1, K 2, K 3, K 4 and K6 at the same time.

Enter commands without spaces.

Numbers = Letters a through i together with dot 6 ! See chapter 10: German braille coding.

Remember: The braille table setting remains stored in memory after power-off.

4.2. Changing ASCII-Braille Table

There are two ways to create a personal ASCII-braille table:

1. Change an existing table using an MF2 keyboard
2. Change a table on PC.

4.2.1. Changing the ASCII-Braille table using an MF2 keyboard

First the ELOTYPÉ has to be switched to the language (braille table) you want to work with (see 4.1)

Following connect a MF2 keyboard - with the key layout of the language you are using - to the ELOTYPÉ.

The ELOTYPÉ must be in typewriter mode. Now enter the following commands on the MF2 keyboard only:

first command:

ESC+cy xx ENTER This command copies the braille table, which you want to modify into the "user table" area. cy activates the copy command. XX correspond to the number of the braille table - resp. the country code - you wish to modify (see chapter 4.1). (e.g. Italian = 39).

Please enter without spaces!

e.g.: Please enter the following keys:

Key ESC, key +, key c, key y, key 3, key 9, key ENTER

After about 1 second the ELOTYPÉ confirms the input with a positive signal.

Are there any problems, please enter all keys separately without the key ESC. Please check, whether the ELOTYPÉ prints the keys + c y 3 9 properly.

Now that the table which you wish to change has been loaded into the user table area, you can assign new braille characters to letters:

second command:

ESC+cc (letter) (braille dots) ENTER *without spaces!* cc is for change character. After the command call, enter the letter you wish to modify, then press **the number keys on the keyboard** to assign braille dots, with the following rule:

key 1 on MF2 keyboard for dot 1
key 2 on MF2 keyboard for dot 2
etc.
key 8 on MF2 keyboard for dot 8

Enter the numbers corresponding to the braille dots for your letter. Do not separate the numbers with commas or spaces. When finished, press ENTER. For example, to assign dots 3, 4, and 5 to the German character ä, type: ESC+ccä345 ENTER.

The second command is repeated for each braille character you wish to modify. The modifications are permanently stored in the user braille table. The user braille table is not affected by switching the mains off/on. You can switch to a different braille table with the commands in chapter 4.1.

4.2.2 Configuring ASCII-braille Tables from the PC

The complete sequence of commands to modify an ASCII-braille table can also be sent to the ELOTYP 4 from a PC. This requires a text file which must be written into the PC and sent to the ELOTYP 4 via the RS 232 while in the printer mode.

Additionally you have to switch via the ELOTYP 4 keyboard to the language you want to work with (see 4.1) e.g. #&39

The text file is written as follows:

<u>Line</u>	<u>Command code</u>	<u>Comment</u>
1.		
2.		character.
3.		second character. etc.

Remember:

- Only the commands in bold type should be written in the text file.
- A separate line should be written for each character to be modified.
- A Maximum of 256 characters (in eight-dot braille) can be configured.
- The "Customer Table" is loaded after sending the file from the PC to the ELOTYP 4.
- This table remains active after turning the power off/on.
- Other tables can be selected using the commands in section 4.1.

5. The ELOTYP 4 in a communications system

In the typewriter mode, all braille characters embossed on the ELOTYP 4 are at the same time available in their ASCII coding via the parallel or the serial (RS 232) port for any possible further processing, regardless of the device they are entered from (the braille keyboard or a connected MF2 keyboard).

Connecting the print display unit "ELVIS-D" to the ELOTYP 4 via the RS 232 (see Appendix) will directly allow to show embossed braille characters in print.

It is of course also possible to represent embossed braille characters in conjunction with an ordinary printer or a PC monitor using a special terminal program, such as "PROCOMM" or under WINDOWS "Hyperterminal".

So when the ELOTYP 4 is extended for use with the "ELVIS-D", and an MF2 keyboard, then it is simply possible for the blind or a deaf-blind to communicate in writing with sighted persons who have no knowledge of braille.

When a text is entered into the ELOTYP 4 from the braille or the MF2 keyboard, then it is embossed on the ELOTYP 4 in braille and at the same time sent via the parallel port to an ordinary printer or the serial port to a PC and is made available in print to a sighted person.

Since the ELOTYP 4, when used in the brailler mode, sends each embossed character in ASCII via the RS 232 and the parallel ports, one has only to link the above mentioned units to the ELOTYP 4 to set up a communications system. To receive characters when a PC is connected to the ELOTYP 4, a terminal program is used (for example "PROCOMM", or under WINDOWS, "Hyper Terminal"). Note that the correct CODEPAGE (normally, page 437) must be loaded in the AUTOEXEC.BAT when working under DOS or WINDOWS 3.1[®], and the respective language setting activated under WINDOWS 95[®].

Remember:

- In the communications mode, the ELOTYP 4 can receive no data via the serial or parallel port.
- When pressing the K8 key at the end of a line, the ELOTYP sends a "CARRIAGE RETURN/LINE FEED" (CR/LF). This must be observed when setting up an ordinary printer.

5.1. German braille grade 1 (restated grade 1)

In a great number of cases, for example in integrated education, braille is used according to the rules of grade 1. These rules are contained in a special ASCII-braille table.

The commands

#&K (select) and #&V (quit) are used to select or quit the grade 1 table. (& means: Press the K1, K2, K3, K4 and K6 keys together).

This table is only active when the German ASCII-braille table (&49) is loaded at the same time. The German braille grade 1 includes the following rules, and while in the communications mode, the braille characters entered are converted into the corresponding full ASCII.

Input from the ELOTYP

dots/key:

1,6
 1,2,6
 1,4,6
 1,4,5,6
 1,5,6
 3,4,6
 1,2,5,6
 2,4,6
 3,4,5
 3,4
 2,3,4,5,6
 2,3,4,6
 3,4,5,6 + a,b,c...i,j

Output in print

on "ELVIS-D, PC monitor or printer

au
 eu
 ei
 ch
 sch
 ie
 ü
 ö
 ä
 äu
 st
 ß
 1,2,3...9,0 (digits until the next space)

4,6 + 1 letter 1 capital letter, rest of word
 in small letters
 4,5 + several letters capital letters until blank

The numeric sign (3,4,5,6) and the signs for capital (4,6; 4.5) are not represented themselves in print but only in their effect.

5.2. Text input from the MF2 keyboard in the communications mode

Remember: Due to limited processor capacity, it is not possible to install a program in the ELOTYP to process MF2 keyboard entries according to the rules of "braille grade 1" and convert for example the input of "sch" into the braille character dots 1,5,6.

If a sighted person wants to have the characters input from the MF2 keyboard also embossed on the ELOTYP in **grade 1** (rather than full braille), then it is **absolutely** necessary to input the characters from the MF2 keyboard as shown in the following table using the described keys.

Input from the MF2 keyboard

1
 2
 3
 4

Braille output on the ELOTYP

Dots

au 1,6
 eu 1,2,6
 ei 1,4,6
 ch 1,4,5,6

5		sch	1,5,6
8 (don't hit "ü" key!)		ü	1,2,5,6
9 (don't hit "ö" key!)		ö	2,4,6
0 (hit Zero key!)		ie	3,4,6
` (hit SHIFT plus `` key, not "ä")		ä	3,4,5
~ (Altgr with + key, not "ß")	ß		2,3,4,6
(Altgr with < key)		äu	3,4
} (Altgr with 0 key)		st	2,3,4,5,6
#		Number sign	3,4,5,6
\$		capital letter	4,6
>		capital word	4,5

6. The editor mode

The ELOTYPÉ has a battery-backed memory into which text can be written for duplicating, print-out or transfer to other electronic devices.

In order to offer a maximum of convenience for the user, the large memory (with a maximum space for 32 000 braille characters) is organised by page and by line.

It is possible to store 25 pages of text in 6-dot braille with 40 characters per line and 30 lines each. It is possible to delete and insert text and while doing so the text flows accordingly. The editor memory is accessed using the command #e (command call-e). This command is confirmed with a positive audible signal (an ascending scale). After the editor has been activated, the "editor cursor" will be placed at the beginning of the first page of the editor memory (page 1, line 1, column 1).

Activating another mode (e.g. the printer mode with #d) closes and leaves the editor memory.

6.1. Key definitions in the editor mode

In the editor mode, the assignment of the braille keys K1 through K6 on the keyboard can be redefined by pressing K7 or K12 so that (K3) is assigned to written characters, (K2) to words, (K1) to lines (K4) to pages and (K6) to markers. The keyboard can only be redefined in the editor mode. This function enables the user for example to delete one character, one word, one line or one page or insert text. In addition, it is possible to move the "editor cursor" by line or by page. (for more details see "Editor commands").

The editor cursor is an imaginary cursor that marks the memory location in which a braille character is stored.

There are six markers (M1 through M6) which can be used to mark special locations in the entire editor memory, like the tabs or riders on index cards. M1, M2, and M3 can be moved to any written character without changing it or any memory location; M4, M5, and M6 can only be moved to the beginning of a line.

In the editor mode, keys K10 and K11 move only the paper, not the editor cursor in memory! K10 and K11 are inoperative in editor memory.

6.2. Editor commands

6.2.1 Cursor commands

There are two special keys (K-, K+) and a set of instructions which enable the user to control the "Editor cursor" in the 25-page memory. Observe the following first:

The memory locations for any line in the memory are assigned to the position of the embossing head from the left to the right.

The "editor cursor" can be moved forward and back with K+ (forward) and with K- (backward) in any memory line, and while doing so the embossing head is also moved accordingly. If a line is blank, the ELOTYPÉ plays a negative audible signal.

Cursor commands

<u>Short description</u>	<u>commands</u>	<u>Description</u>
Move cursor towards end of line	K+ 1*	This command moves the cursor without overwriting text in memory. The embossing head is moved simultaneously.
Move cursor towards beginning of line without	K-	This command moves cursor overwriting text in memory. The embossing head is moved simultaneously.
Cursor 1 line up	K7 K1 K-	The cursor jumps 1 line upwards the beginning of the page and is then located at the beginning of the line.
Cursor 1 line down	K7 K1 K+	The cursor jumps 1 line towards the end of the page.
Prints out cursor line and page	K7 K1 then K3,4,5,6	Prints out the current line and page numbers numbers (line 1 to 30) (K3, K4, K5, K6 = international numeric sign in braille). The embossing head is then moved to the beginning of the line. Print-out: S xx (page) Z xx (line).
Print out text in current line	K7 K1 K8	The text contained in the cursor line is printed. Embossing head does a CR/LF.
Move Cursor to line xx	K7 K1 xx K8 1*	The cursor jumps to the beginning of line xx (xx = 1 - 30 in computer braille). The embossing head moves accordingly.
Move cursor 1 page down	K7 K4 K+	Moves the cursor down to the beginning of the next page (1st line, 1st column)
Move cursor 1 page up	K7 K4 K-	Moves the cursor to the beginning of the previous page (from x to x - 1), 1st column, 1st line.
Move cursor to the beginning of the page	K7 K4 xx	The cursor jumps to the beginning of the page. xx = 1 - 25.

Print current page	K7 K4 K8	Prints out the page on which the cursor is located. The cursor remains in its position.
Move marker x to the beginning of the cursor line	K7 K6 x K+	Marker x (x =4, 5, 6) is placed at the beginning of the cursor line.
Move marker x exactly to the cursor position.	K7 K6 x K+	Marker x (x = 1, 2, 3) is moved to the cursor position.
Move cursor to marker x	K7 K6 x K8	The cursor jumps to the marker position (x = 1 - 6).

1*: These commands are only executed if the appropriate line contains text; otherwise the command is rejected with a negative audio signal.

6.2.2. The delete functions

It is possible to delete a character, a word, a line or a page by pressing key K12. After pressing this key, the user can select K1 through K4 to delete a character using K1, a word using K2, a line using K3 or one or several pages using K4. After the desired key function has been selected, press K- to delete and close the delete procedure. When deleting a character or a word in a line, the space resulting is immediately closed by moving the text in the current line accordingly. The space resulting at the end of the line can then be closed using the text breakdown command #o (see section 6.2.4.).

Delete commands

<u>Short description</u>	<u>Command</u>	<u>Description</u>
Delete character	K12 K3 K-	Deletes the character on which the cursor is placed and moves text accordingly.
Delete word	K12 K2 K-	Deletes the complete word on which the cursor is placed and moves the text within the line accordingly.
Delete line	K12 K1 K-	Deletes the text from the cursor position to the end of line.
Delete text from the cursor position	K12 K4 K-	Deletes text from the current cursor position to the end of the page.
Delete to marker 1 (delete several pages)	K12 K6 K-	Deletes the text from the cursor position to the position of marker 1. Pressing K6 outputs an audible warning signal. The delete command can then be cancelled using K13 !

6.2.3. Inserting text

The user can insert characters or complete passages of text in an already existing document after the command "Open Text Insert" has been activated. Text is always inserted from the position of the "editor cursor" or the "embossing head". Existing text is moved from the insertion point towards the end of the

memory. A word which cannot be completely written at the end of a line will always appear in the next line. If the document is so large that it fills the entire 25-page memory, the text moved by the insertion beyond the last line of the 25th page will get lost. Each character inserted is confirmed with a beep tone.

<u>Short description</u>	<u>Command</u>	<u>Description</u>
Allow text insert	K12 K+	Allows the insertion of text from the cursor position. The insertion is confirmed by an audio signal.
Close text insertion to	K12 K-	Closes the text insert function and allows overwrite text again.

6.2.4. Primary editor commands

<u>Short description</u>	<u>Command</u>	<u>Description</u>
Set the tabulator	# K7	Saves the cursor position as a tab position .
Cancel the tab	# K7	Cancels the tab position moved to.
Move to the tab	K7 K7	Moves to the next tab position in memory.
Activate/deactivate embossing	# K5	Activates/deactivates embossing while writing in the editor. The embossing head always moves while writing, to indicate cursor position.
Print out text	# c K8	Prints out the memory contents from marker M5 to M6.
Print multiple copies	# c xx K8	Prints out xx copies of the text from marker M5 to marker M6 (xx = 01 to 99).
Text breakdown	# o	All text from marker M5 to marker M6 is broken down into paragraphs aligned on the left margin, without hyphenation.
Send text via interface	# p	All text from marker M5 to M6 is sent via RS 232 and/or parallel interface, with CR/LF at the end of each line.
Receive text from interface	# i	Text received via RS 232 or parallel interface is written into memory starting at marker M4. Writing is not supervised! A CR/LF is expected at the end of each line.
Move text	# m	All text between marker M5 and M6 is moved to the position of marker M4. Any existing text is overwritten.

7. Printing tactile graphics with the ELOTYPÉ 4E

The graphics mode is activated using the command # g. The ELOTYPÉ confirms this command with a positive audio signal. Selecting another mode (for example the braille mode # s) deactivates the graphics mode. In the graphics mode, the ELOTYPÉ 4E receives appropriate data X- and Y-coordinates from the RS 232 serial port for positioning the embossing head. It prints out graphics only with pin 1 of the embossing head. This ensures for all the dots to have a constant distance of 2 mm in each direction. A graphics program "BrailleGraf" which runs under WINDOWS is described in the appendix.

8. The ELOTYPÉ 4E in network mode

Several ELOTYPÉs can be connected to form a network in a loop via the high-speed serial Bus (RS 485), for example to enable deaf - blind persons to communicate, or for teacher - student networks. The network mode is activated using the command # N and exited using the command # n. **Note that it is important to enter a capital N for network mode, and small n to exit.** In network mode, the loop is used as the input/output channel for the machines within the network.

Remember: The network mode is activated using the command #N (N as a capital letter in computer braille: dots 1,3,4,5,7) and terminated using the command #n (n as a small letter). If entered correctly, the two commands will be confirmed by a positive signal.

The table below shows some useful possibilities of networking several machines in the braille and printer modes:

<u>Mode</u>	<u>1st ELOTYPÉ</u>	<u>2nd ELOTYPÉ</u>	<u>nth ELOTYPÉ</u>
Teacher-students communication	Enter #N from braille mode (teacher)	braille mode (student)	braille mode (student)
Deaf-blind communications system	Enter #N from braille mode	Enter #N from braille mode	Enter #N from braille mode
Multi-copy printer	Enter #N from printer mode (master)	printer mode (slave)	printer mode (slave)

8.1. Teacher-students communications system

All the ELOTYPÉs are linked via the loop (RS 485) and switched to the braille mode first (#s). Using the command #N switches one ELOTYPÉ to the teacher's channel, which means this machine is the only one that can send information to all the other machines within the network.

- Any input from the braille keyboard of the teacher's ELOTYPÉ is received by the students machines.
- It is also possible to route any text received by the teacher's ELOTYPÉ via the RS 232 or the parallel port from a PC to the students' machines. In this case, the teacher's ELOTYPÉ must first be set to printer mode using the command #d.
- Any document saved in the editor memory of the teacher's ELOTYPÉ can be sent to the students' machines using the command #p. To this end, the teacher's ELOTYPÉ must first be switched to the editor mode using the command #e. It is not possible to load text into the editor memory of the students machines via the loop.

8.2. Deaf-blind communications system

While in the braille mode, all the 4E ELOTYP 4 linked within the loop are switched to network mode using the command #N. Now each machine can send and receive information concurrently.

Any input from the keyboards of all the ELOTYP 4E is sent to all the other machines and printed in chronological order. Mind: If two braille entries are made at exactly the same time (in the millisecond range), this may cause mixing up of the data. Although this risk is small, a certain discipline in the group is advisable to avoid confusion.

8.3. Multiple-printer

It is also possible to form a network with several 4E ELOTYPES using the high-speed RS 485 BUS and operate them synchronously as printers. To this end, the machines need only be switched to the printer mode. The ELOTYP 4E which is connected to a PC (via the RS 232 or parallel port) is switched to network mode using the command #N. The master - machine then sends the documents received from the PC to all the slaved ELOTYPES.

Note: Due to the bidirectional printing, the slaved machines start printing only after the master-machine has printed out the first line.

9. Trouble-shooting

There is a control program implemented in the ELOTYP 4 which monitors a great number of possibly erroneous keyboard entries (for example wrong numbers and key combinations) and rejects them with a negative audio signal (a sequence of tones from high to low). Despite very extensive tests it is possible that after a wrong input, the ELOTYP 4 does no longer work normally. In such an extreme case, the user can use the "general reset" for trouble-shooting.

9.1. General Reset

Turn the ELOTYP 4 off. Hold keys K1, K3, and K5 depressed while turning the ELOTYP 4 on until an audio signal is heard informing you that the reset process has been completed. This may take some time. Release the keys K1, K3 and K5. The embossing head will move to the line start.

Remember:

- After a "General Reset" has been performed, all user-settings, e.g. left / right margin, tabs, volume, etc., are erased. The General Reset returns the ELOTYP 4 to the braille mode.
- In addition, the machine is set to the following basic values: Line spacing: 10 mm (step 2), signal volume step 6 (of 10).
- The German ASCII-braille table is loaded.
- 8-dot braille is selected.

If a General Reset does not make the ELOTYP 4 work properly as it used to do, please contact your dealer or the manufacturer.

10. Technical data

German braille coding

The letters and digits required in some of the commands must be entered in German computer braille coding. The input coding for commands and digits is not changed when loading language-specific ASCII or keyboard conversion tables.

<u>Letter</u>	<u>Braille dots</u>	<u>Digit</u>	<u>Braille dots</u>
c	1,4	1	1,6
d	1,4,5	2	1,2,6
e	1,5	3	1,4,6
g	1,2,4,5	4	1,4,5,6
i	2,4	5	1,5,6
m	1,3,4	6	1,2,4,6
n	1,3,4,5	7	1,2,4,5,6
N	1,3,4,5,7	8	1,2,5,6
o	1,3,5	9	2,4,6
p	1,2,3,4	0	3,4,6
s	2,3,4		

General data

Embossing size Medium size embossing: 2.5mm dot spacing / 6.0 mm character spacing

Line spacing Adjustable: 7.5 mm, 10 mm or 12.5 mm
(dot 1 to dot 1 of the following line)

Embossing speed Full 8-dot braille cell: 11 char/sec

Maximum paper width 300 mm

Maximum paper length infinite, using paper feed slot

Paper thickness max. 160 g/m²

RS 232 Baud rate 9600
Data bits 8
Parity no
Stop bit 1

Network interface RS 485, 6-pin "Western" connector

Parallel interface Standard, 25-pin

Operating voltage:

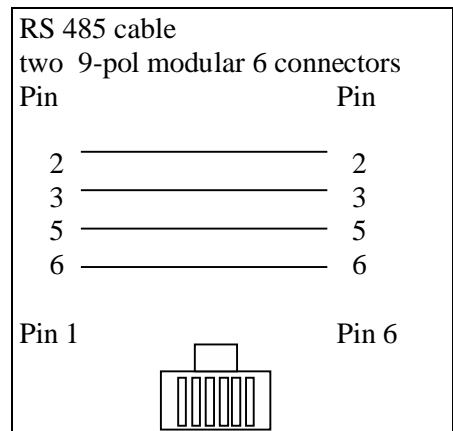
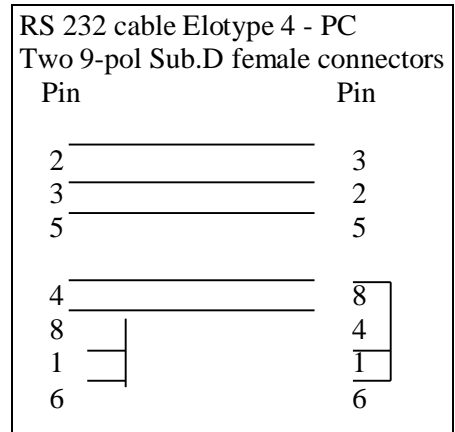
Mains adaptor input 220V to 240V AC,
50Hz

output 31V DC

Power consumption 0.55 A

Total weight 5.6 kg
incl. tractor feeder and mains adapter

Size 295*440*110mm
length*width*height



Package contents

ELOTYPÉ 4 (or 4E), power adapter, tractor, dust protection cover

Available extra hardware

- Interface cable RS 232
- Interface cable for parallel port
- Interface cable for RS 485
- Graphics program "BrailleGraf"
- "ELVIS-D" print display unit
- Ink print printer with interface cable
- MF-2 keyboard
- Aluminium frame case or hard plastic case
- Noise absorbing felt mat
- Endless paper 1000 sheets in box, 12" x 11" or 12" x 8"
- Single sheets in packs of 250

Hardware adaptation

- keyboard for single hand operation left / right
- Extra keyboard cover for spastics
- Individual keyboards for people with multiple disabilities
- Vibrator for deaf-blind persons

Appendix:**HELP for installing the ELOTYPÉ 4 as a printer under WINDOWS 95 / 98:**

1. Double click on "my computer" on the desktop.
2. Double click on "printer", then on "new printer".
3. Click on "continue".
4. Select "local printer", then click "continue".
5. In the "manufacturer" menu on the left, select "Generic".
6. Select "Generic / Text only" from the list on the right, then click "continue".
7. Select the interface your ELOTYPÉ is connected to from the list, then click "continue". (LPT1, COM1, COM2) If you select a serial Port like COM1 or COM2, you have to configure this Port. 9600 Baud, 8 databit, no parity, 1 stopbit. The protocol should be 'Hardware'.
8. Now enter "Elotype" in the enter field "printer name". If you wish, you can then make the ELOTYPÉ your standard printer by clicking the button below. Then click "continue".
9. Your ELOTYPÉ will now be installed as a printer. If you wish to print a test page, click "no", then click "continue".
10. Depending on your Windows 95 installation, the printer driver is installed either from hard disk, diskette, or CD. The computer will prompt you in case you have to insert a disk.
11. Now your ELOTYPÉ is installed, you need to configure it. Double-click the "ELOTYPÉ" icon in the "printer" window.
12. From the "ELOTYPÉ" window that pops up, select "printer" from the menu bar, then "properties" from the pop-up menu.
13. Select the "options" rider. There is a codepage menu on the lower right. Select the code table you wish to use (normally this is codepage 850), then click on "OK".

Now you can print directly from all applications that use the standard Windows printer interface. This includes, among others, WordPad, Excel.

To print, power on your ELOTYPÉ, insert paper, then press the spacebar (K9) after aligning the first line of the paper under the printhead. Then switch into the printer mode by pressing #d. If you are printing from WordPad or Excel, set the page margins (upper, lower, left, and right) to 0 mm in the print menu. The ELOTYPÉ will control page margins using its own software.

To print, simply select "file / print" from the menu bar, then press OK.

ELVIS-D "Easy reading braille in print"

ELVIS-D is a print display unit intended for sighted persons who have no knowledge of braille or do not want to get an expensive computer system for reading text being written on the ELOTYPÉ at a time. ELVIS-D allows to immediately read in print a text being written on the ELOTYPÉ in full braille. To this end, all you have to do is connect ELVIS-D to the ELOTYPÉ via the serial port. The display always shows the last written four braille lines with a maximum of 40 characters. There are two keys which allow to check each four lines of stored text at a time.

ELVIS-D weighs 420 g and is 20.5 cm wide, 6.5 cm deep and 3.5 cm high.

The graphics program "BrailleGraf" for the ELOTYPÉ

BrailleGraf allows

- to make vector-oriented drawings. This means different drawing objects, such as straight-lines, rectangles, circles, etc., are defined by their start and end points.

- Drawings can be labelled. "BrailleGraf" converts the letters into braille characters.

- There is an additional function allowing to load / insert existing images in the BITMAP-format in "BrailleGraf", where they are encoded for tactile print-out.

- "BrailleGraf" runs under WINDOWS 95 and lager.



CE-Certificate of Compliance
for the Braille typewriter ELOTYPÉ4/4E

We hereby certify that the braille typewriter ELOTYPÉ4/4E has been tested and found to comply with the rules and test standards stated below.

Equipment, name: Braille typewriter, ELOTYPÉ4/4E

EC-rules:

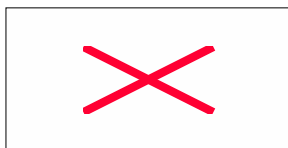
- 89/336/EC, 91/263/EC, 92/031/EC,
- 73/023/EC

Technical basic standards:

- | | |
|--|---|
| - Limit values for radio noise | EN 55022:1994-08 and EN 55022/A1:1995-05 KI.B |
| - Technical basic standard for immunity from noise | EN 50082-1:1992-01 |
| - Low voltage rule | EN 60950/A2:1994-09 |

Nov. 24, 98

E. Schäfer



Manager