

BRAILLE IN 2

User's Manual



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Introduction

BRAILLE IN II is a Braille keyboard for personal computers. It connects to the keyboard port of the computer and is ready to use as soon as it is plugged in. You need not install any software drivers for the device. If you want to use the regular QUERTY keyboard at the same time, you plug it into the keyboard port on the back of BRAILLE IN.

For loading new Braille tables or to adjust the keyboard to foreign language keyboard layouts, BRAILLE IN is equipped with a serial port. On the disk provided with the device, you will find a communications program that allows loading the Braille tables and / or keyboard layouts — or even a software upgrade if necessary.

With its 8 ergonomically styled Braille keys, BRAILLE IN obviously allows to write any of the 256 ASCII characters in Braille. A caps lock function is also provided. If you use the space keys together with the Braille keys, you may even enter special functions like function and arrow keys via the BRAILLE IN keyboard.

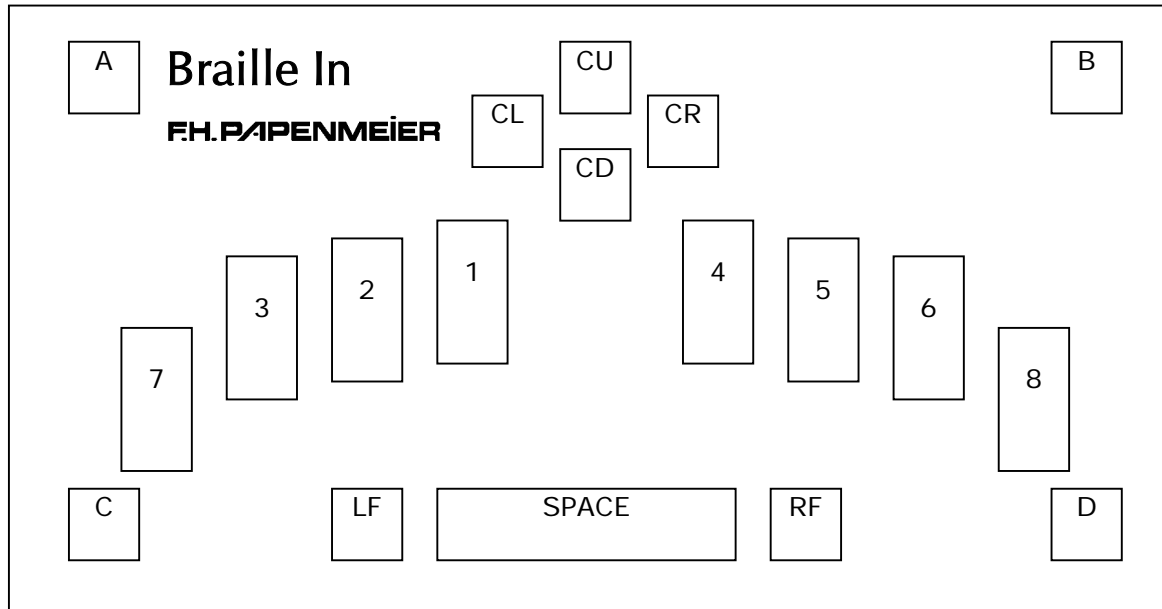
BRAILLE IN 2 complies with the requirements of the European Union Medical Devices Directive, as an active **class I medical product** intended to be used for the purpose of compensation for a handicap.

This product may only be used in home or office environments. In medical facilities, this product may only be used in office rooms.

Please read this manual and the information on medical devices (chapter 6) carefully.

Physical Description

BRAILLE IN II is 11,2" wide and 5,1" deep and has 19 keys.



In the center, you find the ergonomically styled 8 dot Braille keypad (keys numbered from 1 through 8): The first 6 Braille dots are situated like on any other brailier. Dot 7 is situated to the left of dot 3. It is written with the left small finger - in most cases, it is used to write capitalized characters. Dot 8 is situated next to dot 6, and is written with the right small finger - it is mostly used for characters of the extended ASCII code.

In the center, you find the space bar (SPACE). Besides its primary function (i.e. writing spaces), it can also be used in conjunction with other Braille keys to produce special functions. On both sides of the space bar you find two function keys, (LF) and (RF), which used individually, will also produce a space, they are also used for special functions in conjunction with the Braille keys (see below).

Behind the Braille keys, you find four arrow keys, (CU), (CD), (CL), and (CR). They are used like the arrow keys on the standard keyboard.

In the four corners of BRAILLE IN, you find four more function keys (A) in the upper left corner, (B) in the upper right corner, (C) in the lower left corner, and (D) in the lower right corner. They are assigned with often used function keys.

On the backpanel of BRAILLE IN, you will find two connectors: seen from behind, on the far right, you will find a 9 pin male serial connector; next to it, a PS/2 type (micro-DIN) keyboard connector, and a spiral cable with a standard 5 pin keyboard connector. Like any "normal" keyboard, BRAILLE IN II does not require an external power supply.

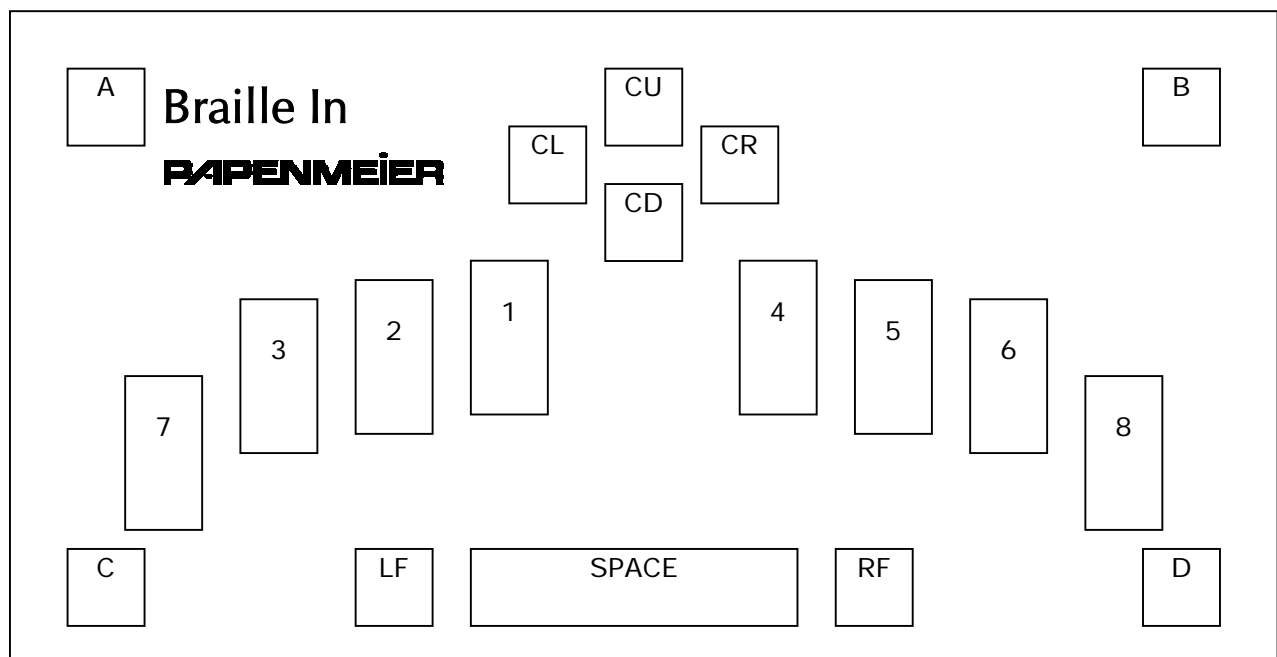
BRAILLE IN ships with all necessary cables and adapters for the connection to your computer's keyboard port and to your 9 or 25 pin serial port connectors.

Installation

BRAILLE IN is generally delivered with the Braille table and PC keyboard layout suiting your country. If you don't want to use different Braille tables, you just plug it into the keyboard port of your computer (and, if you prefer to connect your "normal" QUERTY type keyboard at the same time, you plug this one into the back of BRAILLE IN), and as soon as your computer is powered up, you can start working.

If you want to use another Braille table however, you must load a new assignment table (or firmware program) into the unit. Please refer to chapter "Loading new Braille Tables" (page 8) for more details.

BRAILLE IN Key Assignment



Keys	Meaning	Position	Function alone
1-8	Braille keys	dots 1 through 8	Braille dots
LF	Left Function	left of SPACE	Space
RF	Right Function	right of SPACE	Space
RF	Space	Center	Space
CU	Cursor up	behind Braille keys, up	CU
CD	Cursor down	behind Braille keys, down	CD
CL	Cursor left	behind Braille keys, left	CL
CR	Cursor right	behind Braille keys, right	CR
A	Function key A	upper left corner	ESC
B	Function key B	upper right corner	Backspace
C	Function key C	lower left corner	ALT
D	Function key D	lower right corner	TAB

Special function: All 8 Braille dots + LF + RF correspond to CTRL-ALT-DEL

The following sub-chapters are classified according to the key groups of the MF2 type computer keyboard.

Some PC keys have multiple Braille assignment, as they can be assigned to different key groups.

A. Writing (according to the selected Braille code table)

- Dots 1 - 6: lowercase characters, numbers, punctuation marks (please note that accent characters may also use dots 7 or 8).
- Dots 1 - 6 together with dot 7: capital characters.

B. Control characters:

- Dots 1 - 6 together with dots 7 and 8.

C. PC Function keys:

- Combinations with LF (left thumb key): Function keys and their combinations with SHIFT, ALT and CTRL.
- RF with the right hand Braille keys: one-handed functions
- all 8 Braille keys with LF and RF: "Caps Lock"

Function Keys and MF-Keys

You can activate the PC function keys, and their combinations with SHIFT, CTRL, or ALT. For all these key (combinations), you need the LF key.

ESCAPE	LF + dot 3
CTRL-Print screen (System Request)	LF + dots 578

- For the normal function keys, press LF along with the Braille letters abcd efgh ij
- For the function keys with SHIFT, press LF along with dot 7 and the Braille letters abcd efgh ij
- For the function keys with ALT, press LF along with dot 8 and the Braille letters abcd efgh ij
- For the function keys with CTRL, press LF along with dots 7 and 8 and the Braille letters abcd efgh ij

F-Key	normal	With Shift	With Alt	With CTRL
F1	LF + dot 1	LF + dots 17	LF + dots 18	LF + dots 178
F2	LF + dots 12	LF + dots 127	LF + dots 128	LF + dots 1278
F3	LF + dots 14	LF + dots 147	LF + dots 148	LF + dots 1478
F4	LF + dots 145	LF + dots 1457	LF + dots 1458	LF + dots 14578
F5	LF + dots 15	LF + dots 157	LF + dots 158	LF + dots 1578
F6	LF + dots 124	LF + dots 1247	LF + dots 1248	LF + dots 12478
F7	LF + dots 1245	LF + dots 12457	LF + dots 12458	LF + dots 124578
F8	LF + dots 125	LF + dots 1257	LF + dots 1258	LF + dots 12578
F9	LF + dots 24	LF + dots 247	LF + dots 248	LF + dots 2478
F10	LF + dots 245	LF + dots 2457	LF + dots 2458	LF + dots 24578
F11	LF + dots 2	LF + dots 27	LF + dots 28	LF + dots 278
F12	LF + dots 4	LF + dots 47	LF + dots 48	LF + dots 478

Function Keys and MF-Keys

Center Block: Arrow Keys

Normal SHIFT ALT CTRL

Right arrow:	LF + dots 1235	LF + dots 12358	LF + dots 123578
Left arrow:	LF + dots 123	LF + dots 1238	LF + dots 12378
Up arrow:	LF + dots 135	LF + dots 1358	
Down arrow	LF + dots 136	LF + dots 1368	

Center Block: **INS - Home - PageUp** **DEL - End - PageDown**

	normal	ALT	CTRL
Insert	LF + dots 123456	LF + dots 1234568	
Delete	LF + dots 37		
Home	LF + dots 23456	LF + dots 234568	LF + dots 2345678
End	LF + dots 234	LF + dots 2348	LF + dots 23478
PgUp	LF + dots 1356	LF + dots 13568	LF + dots 135678
PgDn	LF + dots 1236	LF + dots 12368	LF + dots 123678

Numeric Keypad

/ * -	normal	SHIFT	ALT	CTRL
/	LF + dots 256	LF + dots 2568	LF + dots 25678
*	LF + dots 35	LF + dots 357	LF + dots 358	LF + dots 3578
-	LF + dots 36	LF + dots 367	LF + dots 368	LF + dots 3678

7 8 9 +	normal	SHIFT	ALT	CTRL
7/Home	LF + dots 12456	LF+dots 124567	LF + d. 124568	LF +d. 1245678
8/Up arrow	LF + dots 1256	LF + dots 12567	LF + dots 12568	LF +d. 125678
9/Down arrow	LF + dots 246	LF + dots 2467	LF + dots 2468	LF + dots 24678
+	LF + dots 235	LF + dots 2357	LF + dots 2358	LF + dots 23578

4 5 6	normal	SHIFT	ALT	CTRL
4/Left arrow	LF + dots 1456	LF + dots 14567	LF + dots 14568	LF + d. 145678
5	LF + dots 156	LF + dots 1567	LF + dots 1568	LF + dots 15678
6/Right arrow	LF + dots 1246	LF + dots 12467	LF + dots 12468	LF + d. 124678

1 2 3	normal	SHIFT	ALT	CTRL
1/End	LF + dots 16	LF + dots 167	LF + dots 168	LF + dots 1678
2/Down arrow	LF + dots 126	LF + dots 1267	LF + dots 1268	LF + dots 12678
3/PgDn	LF + dots 146	LF + dots 1467	LF + dots 1468	LF + dots 14678

0 . Enter	normal	SHIFT	ALT	CTRL
0/Ins	LF + dots 346	LF + dots 3467	LF + dots 3468
./Del	LF + dots 23	LF + dots 237
ENTER	LF + dots 2356	LF + dots 23567	LF + dots 23568	LF + d. 235678

One-handed Cursor Control

Left arrow	RF + dot 4
Right arrow	RF + dot 6
CTRL- Left arrow	RF + dots 45
CTRL- Right arrow	RF + dots 56..
Up arrow	RF + dots 46
Down arrow	RF + dots 58
Delete	RF + dot 5
Backspace	RF + dots 456
Home	RF + dots 48
End	RF + dots 68
Page up	RF + dots 456
Page down	RF + dots 568
ENTER	RF + dot 8

Quick Commands

Backspace	LF + dot 7
Enter	RF+ dot 8
ESCAPE	LF+ dot 3
Delete	LF+ dots 37; LF+-dots 237; RF + dot 5

Special Windows Key Combinations

CTRL-ESC (open Start menu)	LF + RF
CTRL-ALT-DEL (Task list)	LF + RF + dots 12345678
ALT-TAB	SPACE + dot 4
SHIFT-TAB	SPACE + dot 5
CTRL-TAB	SPACE + dot 6
SHIFT-CTRL-TAB	SPACE + dot 8

ALT with Alpha-Keys

In order to access combinations of ALT with the keys of the alpha keypad (standard letters), press RF and the corresponding letter (without dot 7).

Example: ALT-j = RF + dots 245

CTRL-key Combinations

CTRL-Print screen	LF + dots 578
CTRL-Plus	LF + RF + dots 235
CTRL-Minus -	LF + RF + dots 36
CTRL-Enter	LF + RF + dot 8

Loading new Braille Tables

Warning

Please read the following carefully. The Braille-In control program contains the Braille codes and is therefore of prime importance for the functionality of the device. Mistakes made while uploading the control program may cause the device to stop working.

Preparing the Device

In order to load a new control program (and thus a new Braille table), you have to prepare the device for this purpose. This procedure is a little complicated in order to prevent that you enter it unintentionally.

At first, you must erase BRAILLE IN's old control program. For this purpose, press and hold BRAILLE IN's left and right arrow key while you connect the keyboard cable with the PC.

Second, for loading a new control program (and thus, a new Braille table), you also have to connect the BRAILLE IN serial port with COM1 or COM2.

Procedure

DOS

Once BRAILLE IN is connected properly to the PC and the old program is eliminated (see above), start the upload program.

You can do this in two ways:

1. Start the upload program with the following syntax:

UPLOAD [COM PORT NUMBER] [FILENAME] 19200

Example: UPLOAD 1 US_8DOT.BIN 19200

(where BRAILLE IN is connected to COM1 and the filename to load is US_8DOT.BIN).

2. Use one of the two provided batch files, UPLOAD1.BAT (when BRAILLE IN 2 is connected to COM1), or UPLOAD2.BAT (when BRAILLE IN 2 is connected to COM2).

In this case the syntax for the example above would be the following:

UPLOAD1 US_8DOT

(Please note that in this case, you do not have to write the extension of the filename!)

In both cases, you will see the file transfer progress on the computer screen. Once the program is terminated, you can use BRAILLE IN 2 with the newly loaded Braille code.

Windows

Once BRAILLE IN is connected properly to the PC and the old program is eliminated (see above), start the upload program.

Start the upload program with the following syntax:

UPLOAD32 [COM PORT NUMBER] [FILENAME]

Example: UPLOAD32 1 US_8DOT.BIN

(where BRAILLE IN is connected to COM1 and the filename to load is US_8DOT.BIN).

You will see the file transfer progress on the computer screen. Once the program is terminated, you can use BRAILLE IN 2 with the newly loaded Braille code.

Important Advice

Purpose of the Device

BRAILLE IN 2 is intended to be used for the purpose of compensation for the visual handicap of blind people.

According to the European Council directive 93/42/EEC (Medical Devices Directive), it has therefor been classified as an active class I medical device.

This product may only be used in home or office environments. In medical facilities, this product may only be used in office rooms.

The connected PC must comply with the standards regarding safety and EMC (electromagnetic compatibility) relevant for the area where it is used.

Safety Advice

Before starting to operate BRAILLE IN 2, the user should read this manual.

The device may only be used with the original accessories and in combination with the products foreseen for this purpose by F. H. Papenmeier. If a combination with other devices is necessary, those devices must comply with the relevant standards.

- The device may only be used in closed and dry rooms. The ambient temperature must not exceed 40° C (ca. 100° F). Do not expose the device to direct sunlight or humidity (rain).
- Repairs and maintenance work may only be undertaken by F. H. Papenmeier or by authorized service centers.

There are no known risks for your health that might be caused by the use of this product.

General Precautions

Our products guarantee optimum safety and reduce to a minimum the strain caused through over-exertion. However, when respecting some precautions you can contribute to avoid prejudice to your health or damage to the product.

- If a cellular phone is used close to the product, a minimum distance of 30 cm (1 ft) shall be respected.
- Do not expose the product to strong pressure, and do not drop any objects on the product. This might damage the product or lead to malfunctions.
- In order to avoid repetitive strain injury at your hands caused through long-time use of the function elements and reading the Braille display, we suggest pauses and relaxation exercise. In specialized bookshops you also find literature on how to equip a workplace in an ergonomical way and on how to avoid strain through an appropriate sitting position.

CE-Marking

BRAILLE IN complies with the relevant standards regarding the electro-magnetic compatibility (EMC) and the safety, and are marked with the CE sign.

Papenmeier cannot guarantee however that this product still complies with these standards if it is connected to cables or devices not produced by F. H. Papenmeier. In this case, the person(s) connecting the cables or devices are responsible for taking care that the combination complies with the required standards. In order to avoid EMC problems, you should observe the following advice:

- Only connect accessories and devices marked with the CE mark.
- Only use shielded connecting cables.

CE Certificate Of Conformity

We,
(Supplier's name) F.H.Papenmeier GmbH & Co KG
(Address) Talweg 2
D-58239 Schwerte, Germany

declare under our sole responsibility that the product

BRAILLE-IN 2

(Product numbers: 1.8542.009.00,
and variants: 0.8542.008.00, 0.8542.007.00)
(Name, type or model, lot, batch or serial number)

to which this declaration refers is a medical device Class I and in conformity with the following standard(s) or other normative document(s)

1. EN 55 022
2. EN 61 000-3-2
3. EN 61 000-3-3
4. EN 50 082-1
5. EN 60 950

(Title and/or number and date of issue of the standard(s) or other normative document(s))

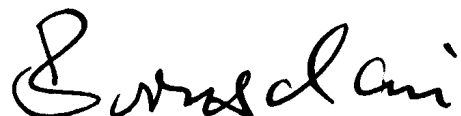
Supplementary information:

The product herewith complies with the requirements of the following Directive(s) and carries the CE marking accordingly:

- 89/336/EEC (EMV Directive)
- 93/42/EEC (Medical Device Directive)

Schwerte, 98/05/14

(Place and date of issue)



(name and signature
or equivalent marking of authorized person)