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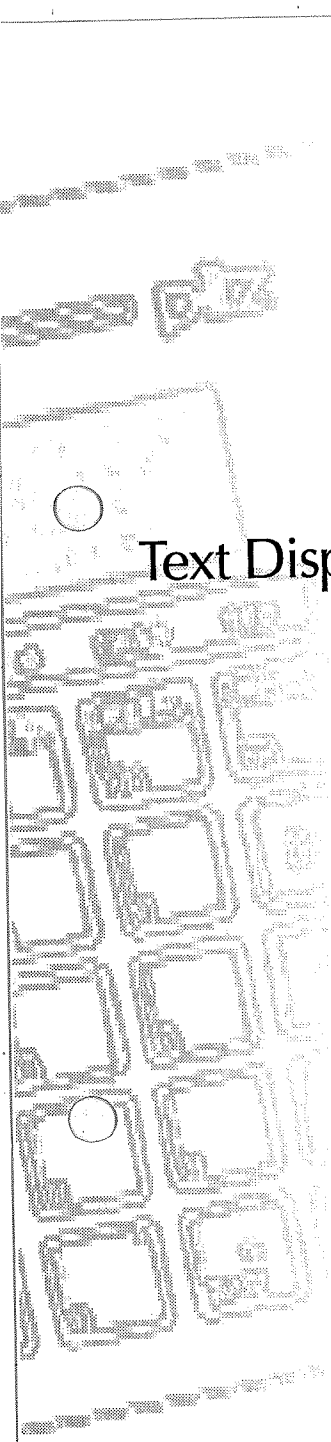
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Text Displays and Operator Terminals

TC-MF II
Keyboard Controller
Operating Manual
Item No. 19 982

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This manual is valid for the TC-MF II Keyboard controller, Version 1.0

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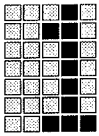
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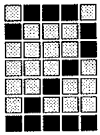
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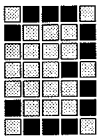
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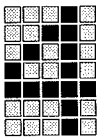
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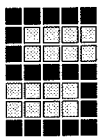
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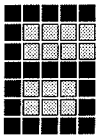


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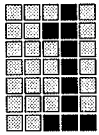
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Introduction

Purpose of manual

This manual describes the functionality and operation of the keyboard controller TC-MF II for Pilz industrial computers.

This manual is intended for instruction and should be retained for future reference.

Hotline

If you have any questions, please contact the Pilz hotline
Tel. 0049 711 3409-333.

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Introduction

Overview of manual

This manual is divided into the following 7 chapters:

1 **Introduction**
The introduction is designed to familiarise the user with the contents and structure of this manual and any special procedures which need to be followed.

2 **Overview**
Provides information on the most important features of the keyboard controller and gives a brief outline of the application area and range available.

3 **Safety**
This chapter **must** be read as it contains information on the safety regulations and intended application.

4 **Function description**
Contains detailed information on the functionality of the keyboard controller and configuration programs.

5 **Commissioning**

This chapter describes how to select the configuration data in the language of your choice.

6 **Operation**
This chapter provides information on using the integrated configuration program and the TC.EXE program. It also contains examples for the keyboard layout.

7 **Appendix**
The Appendix contains tables of configuration options for the types of Pilz industrial computers and monitors available.

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Definition of symbols

Information in this manual which is of particular importance can be identified as follows:



DANGER!
This warning must be heeded! It warns of a **hazardous situation which poses an immediate threat of serious injury and death,** and indicates preventive measures which may be taken.



WARNING!
This warning must be heeded! It warns of a **hazardous situation which could lead to serious injury and death,** and indicates preventive measures which may be taken.



CAUTION!
This refers to a hazard which can lead to a less serious or minor injury plus material damage, and also provides information on preventive measures which may be taken.

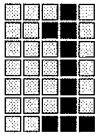


NOTICE
This describes a situation in which the system(s) could be damaged and also provides information on preventive measures which may be taken.



INFORMATION
This gives advice on applications and provides information on special features, as well as highlighting areas within the text which are of particular importance.

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Notes

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Overview

Keyboard controller

Each industrial computer is supplied with a specific keyboard configuration which can be amended if required. The TC-MF II controller enables

- Sequences which are often repeated during operation to be assigned to special keys and function keys;
- Integrated keyboard keys to be password protected, i.e. keys can be locked or enabled using a user password;
- The industrial computer to be operated via an externally connected standard MF II keyboard;
- Individual keys to be assigned a temporary or continuous function;
- The internal keyboard to "learn" sequences from an external keyboard via the "teach-in".

Any key combinations allocated are retained after the supply voltage is switched off, as it is written to the Flash memory. The amended keyboard layout can be stored on disk and transferred to other Pilz industrial computers.

The keyboard controller also has an integrated program (firmware), which enables several options for a new configuration. It can, for example, be used under Windows using a word processing program.

We recommend you use the TC.EXE program if you are carrying out extensive configurations. You must start the computer in DOS in order to run the program.

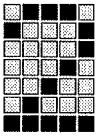
Application area

The TC-MF II keyboard controller can be used with the industrial computers:

- PIPANEL WS15
- PIPANEL Monitor Keyboard
- PIPANEL Monitor Sensor mouse
- PIPANEL ISA
- PICOMP SLA
- PITERMINAL (planned)

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Overview



Range

The controller software is on disk and comes supplied with your computer system. The standard package includes:

- TC-MF II Keyboard controller
- Disk with program and the tables for the standard keyboard layouts
- Operating manual

System requirements

To use the TC.EXE program you require:

- DOS operating system
- A standard external MF II keyboard

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Safety

Intended use

The TC-MF II keyboard controller is used for configuring the keyboard layout for user-specific requirements on the Pilz-range of industrial computers: PICOMP, PIPANEL and PITERMINAL. Any other use will be deemed an improper application.
Following the information provided in the manual forms part of the intended use of the software.

The keyboard controller is intended for use in industrial environments. Use in a domestic environment may lead to interference.

Safety guidelines

The safety guidelines are an important part of this manual. Failure to keep to these guidelines will render all warranty and liability claims invalid.
All local regulations regarding health and safety / accident prevention must be observed.

Use of qualified personnel

Operating personnel should:

- Be familiar with the fundamental regulations concerning health and safety / accident prevention
- Have read and understood the safety guidelines given in this manual.

Installation and commissioning must be carried out by competent, qualified personnel.

Environmental protection

The system should be disposed of properly when it reaches the end of its sevice life.

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Unit-specific safety guidelines



CAUTION!

Switch off all hardware components connected to the industrial computer before making any amendments to the keyboard layout.
During teach-in mode, key codes from the keyboard controller are passed on to the computer. These could trigger functions and activate connected control elements.



CAUTION!

Only use the password on the integrated keyboard,
- If a word processing progam is active (i.e. the key layout is going to be changed) or
- If the teach-in mode is locked, i.e. not authorised (during normal plant operation; flag "No Teach" is set).

We recommend you increase the length of the password to avoid accidental input
It is the responsibility of the user to ensure the password is not made known to any unauthorised personnel

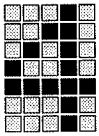
During normal operation, ensure the teach-in mode is locked.

Warranty and liability

All claims to warranty and liability will be rendered invalid if

- The system was used contrary to the purpose for which it was intended
- Damage can be attributed to not having followed the guidelines in this manual
- Operating personnel are not suitably qualified.

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Description

Keyboard controller

The TC-MF II keyboard controller, sometimes referred to as just "controller", creates MF II compatible code sequences when a key, or series of keys, on the integrated keyboard are pressed. In the same way, the controller can transfer codes from an external standard MF II keyboard to the computer.

The controller monitors a matrix of a maximum of 8 x 16 keys, which are coded as KEY 0 to KEY 127 (hexadecimal 0x00 to 0x7f).
The key number is the matrix-code. If the key is pressed the PC sends the "Make" code, and when the key is released it sends the "Break" code. "Make" codes and "Break" codes result in a sequence.

Each key has 4 assignment levels: 0-3. Select keys activate the higher levels. A specific select key for each level can be defined by the user, and any specific properties, i.e. normal, locked or delayed can also be assigned.

A select key's logical status can be defined in addition to its physical status. The computer does not need to process a code for a key which has purely a switch function, i.e. the Alpha-key. In such a case the logical status bears no relevance. However the logical status is important if you are using Shift and Control keys.

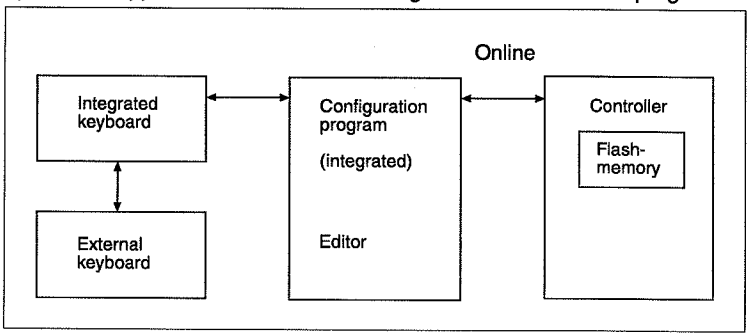
Using "logical" enables the controller to use shorter sequences and thus less space in the memory, as each "Make" code does not need to contain the select sequence. If the "logical" status is defined, the "Make"code is sent before the sequence, and its "Break" code is issued once the entire sequence has been sent. If the "logical" status has not been defined, the "Make" code for the select key is sent, and its "Break" code immediately as the next key is pressed.

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Description

Integrated configuration program

Configuration changes made using the integrated configuration program (teach-in mode) are stored in the non-volatile memory of the controller. The configuration program can only be accessed using a password. For security purposes, the teach-in mode is not authorised when the system is supplied, i.e. the "No teach" flag is set in the TC.EXE program.



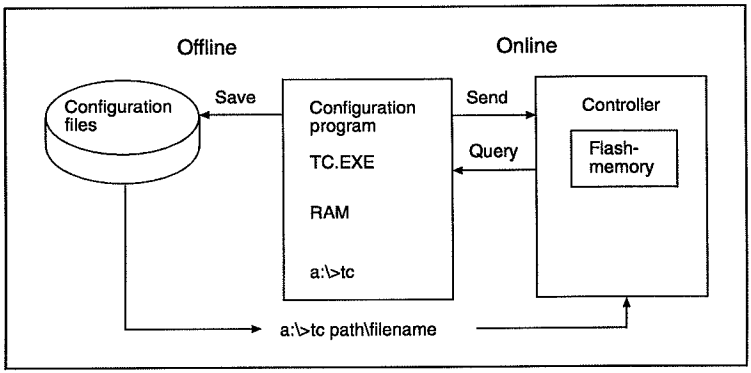
The flag must be deactivated before the configuration progam can be used.

During normal operation the password is used to switch keys between disabled (locked) and enabled.

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TC.EXE program

Configuration changes made using the TC.EXE program are saved in the computer's RAM. Configuration data can be sent to the non-volatile memory (Flash) using the program's send function.



The controller reads in the "Make" codes for the keys on the externally connected keyboard. The controller normally creates a "Break" code automatically, but these can also be defined by the user. The current controller configuration stored in the computer's RAM can be read using the "Query" function.

Any changes stored as a file (*.tc) can be transferred into the keyboard controller using the TC.EXE program.

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Notes

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Configuring the country codes to the membrane keypad

The language setting is important so that characters can be displayed correctly in the appropriate language.

Create a bootable disk. Copy the contents of the original disk and use this as the working disk. Ensure that the original disk is read-only and store it in a safe place.

Connect an external keyboard into the socket available on your industrial computer. The integrated keyboard remains available.

INFORMATION
This manual uses the English country code as its basis.

Insert the disk into the floppy drive. Boot-up the system. The prompt a:\> appears.

Enter "mf2" and press the return key. The line

```
keyb gb,,keyboard.sys
```

appears on screen together with the selection menu.
The selection menu may vary depending on the type of IPC. The following is an example:

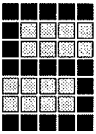
```
Please choose the keyboard system

0 - END
1 - Pilz 32 with  8 F keys
2 - Pilz 32 with 10 F keys
3 - Pilz 32 with 16 F keys
4 - Pilz 32 with 20 F keys
5 - TC-MF2 PIPANEL & PIPANEL ISA
6 - TC-MF2 PIPANEL Special GR
```

The decription "keyboard system" refers to the standard preset key layout (country-specific configuration file). PICOMP systems are referred to as Pilz 32 (corresponds to the number of keys on the keyboard). In the same way "x F keys" refers to the number of keys on the function key strip.

Select the line which corresponds to your model of industrial computer or monitor by pressing the corresponding number,
i.e. 4 for Pilz 32 with 20 F keys.

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You will now be asked to select a language:

```
1 - GR (German)
2 - IT (Italian)
3 - SP (Spanish)
4 - FR (French)
5 - UK (English)
6 - US (American)
ESC - Pilz (other keyboard systems)
```

Pressing ESC brings you back to the start menu.

Press 5 for English, and the following appears on the screen:

```
TC_CONF.EXE v1.0 © pilz GmbH, 1999
Connected with: TC-MFII v 1.0 © pilz GmbH, 1999 - produced 00/0000
Old User version: .....
XXXXXX**********************v.............................
.............................................................
............bafpnc
New User version ....
```

The following processes also occur:

1. Clears the old configuration (XXX)
2. Clears the old keys (***)
3. Transfers the version (v)
4. Transfers new configurations (. . .)
5. Transfer keyboard-specific parameters (bafpnc)

The selected industrial computer and monitor type will appear under "new user version".

The final selection appears with the following message:

```
Your Pilz keyboard is now configured
0    - End
ESC - other systems.
```

Press 0 to end. The message END appears together with the prompt a:\>. The keyboard controller is now ready for operation.

INFORMATION
The keyboard controller software can be saved on to the computer's hard disk.

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Operation

Safety

CAUTION!

Only use the password for the integrated keyboard:
- If a word processing program is active (i.e. the key layout is to be changed) or
- If the teach-in mode is not permitted (under normal plant conditions; " No Teach" flag set and transferred to the Flash-memory, see: Full configuration with the TC.EXE program).

We recommend you increase the length of your password to avoid accidental input.

CAUTION!

The computer must not be controlling or monitoring any plant or installation during configuration. This is because the controller continuously sends characters to the computer which inturn could lead to unforseen results.

NOTICE

Do not configure any unusual key assignments or combinations. It is normal practice that standard keys (letters, figures and similar) are always assigned the same definition for the same operation. Only define special functions using the S-keys.

Do not use the key combination Ctrl+Alt+Del during configuration as this will reboot the computer.

Always make a back up copy of any new configuration made with the TC.EXE program. Use a new name and assign a "User Version" name.

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Operation

Operator guidance

Language

- German, English or French can be selected with the integrated configuration program
- English is the language used within the TC program. All menus, operator guidance and online help texts are in English.

Keyboard inputs

The following terms are used:

- **Select+x**: Hold down the select key together with the x-key. Release the x-key before releasing the select-key.
- **Select, x**: Press each key , one after the other, and release in the same way.

- **Shift+A**: Switches between capital and lower case letters.
- **Ctrl+A**: To carry out complex commands.
- **Tab**: Jumps forwards in dialogue boxes between fields and command buttons, **Shift+Tab** will jump backwards
- **PgUp, PgDn**: Use these keys to select entries in the selection fields
- **Space**: Use the space key in the selection fields to activate the selected entry.
- **Enter**: Press the enter key in the number block to complete entries. Using the enter key in dialogue boxes will carry out the function of the highlighted command button - normally OK - and the entries will be transferred to the RAM. The return key on the alphanumeric block has the same function.
- **Del**: Press the delete key to clear highlighted character sequences or characters at the point where the cursor is located.
- **Alt+x**: Press and hold down the Alt-key and press the leading key to call up a menu or to activate a command button.
- **Esc**: Press the escape key to exit from dialogue boxes without saving. This is valid provided you haven't worked with "Send" or "Teach" in the dialogue box.

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INFORMATION

Throughout the manual the description: „Click the button...“, refers to:

- Select the button using the tab key and press the “Return” or
- Press Alt+ key (leading) letter for that button.

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Configuration using the integrated program (teach-in mode)

Using the integrated configuration program, also known as the teach-in mode, you can carry out functions using the integrated keyboard, for example:

- Disable keys
- Enable disabled keys
- Assign special keys
- Define a password

You can also transfer code sequences from the external keyboard to the controller ("teach-in"). The program requires a password.

Changes are stored in the controller in the non-voltaile memory and the status remains after power down.

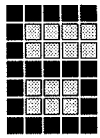
INFORMATION
If you want to duplicate any of your configurations, use the TC.EXE program. Using the function "Query all" from the controller menu, you can read the amended configuration and save to disk from the "File" menu.

Authorise teach-in

Call up TC.EXE (see: Full configuration using the TC.EXE program).
Connect the controller ("Controller" menu --> Connect).
Deactivate the flag "No Teach" ("Modify" menu--> Flag).
Close the TC.EXE program (Alt+X, forget changes --> OK).

NOTICE
Follow the safety guidelines given on page 6-1.

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Activate the configuration program

Start a word processing program on the computer:
- Under DOS e.g.: `copy con nul` (end with Ctrl+C),
- Under Unix: `stty -icanon -echo; cat; stty sane` (End with Ctrl+D).

Password for the teach-in mode is set ex-works:
- Shift+Ctrl+0 for the integrated keyboard. This can be changed.
- Shift+Ctrl+0 for the external keyboard. This always remains the same. Always use the shift and control keys on the left-hand side of the keyboard and the 0 from the number keys.

Enter the password on the integrated keyboard.
You will be requested to enter the language of your choice: English, German or French. If the country setting agrees with the selection, the configuration menu will be shown correctly.

```
Please choose language
0  English
1  German
2  French
```

INFORMATION
The following description is based on the English.

Press 0 for English. The configuration menu appears:

```
==========

TC-MF2 Version v1.0 (c) pilz GmbH, 1998
Keyboard controller configuration

Using the digit keys,

0  Exit menu
1  Enable temporary reserved keys
2  Lock temporary reserved keys
3  Highlight key as reserved
4  Highlight keys as not reserved
5  Change password
6  Change special key assignment
7  Teach key assignment from the external keyboard
Press a digit from 0..7:
```


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Disabling keys

Firstly any key you wish to disable must be highlighted as reserved.

From the configuration menu on screen, press 3 for "Highlight key as reserved". You will be prompted to press which key you want to assign as reserved.

Press 7, for example. The number appears on the screen.
The message, `ok,` appears and then you return to the configuration menu.

Repeat the process for all the keys you wish to reserve.

You will now need to activate the disable.

From the configuration menu on screen, press 2 for "Disable reserved key". The message `ok` appears and you will return to the configuration menu and all reserved keys are now disabled.

Enabling keys

This will enable you to use any keys previously marked as reserved.

From the configuration menu on screen, press 1 for "Enable reserved keys". The message `ok` appears and you will return to the configuration menu. Any reserved keys which were disabled are now enabled.

Removing reserved mode

This enables you to remove the "reserved" and mark keys as "not reserved".

From the configuration menu on screen, press 4 for "Highlight keys as not reserved". You will be requested to press those keys to be highlighted as not reserved.

Press for example 7. The number does not appear on screen. The message `ok` appears and you return to the configuration menu.

Repeat the process for all keys for which you wish to remove "reserved".

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Changing the password for the internal keyboard

The password enables the teach-in mode to be accessed with the integrated configuration program. The password is only valid for the integrated keyboard. It can consist of 2 select keys and up to 4 digits.

Using the configuration menu on screen, press 5 for "Change screen". The following message appears:

```
New password (recommended: Shift+Ctrl+nnnn, n are
digits):
```

Press the new key combination, repeat the entry when requested. The message `password changed` appears and then you will return to the configuration menu.

Changing the special key layout

An alphanumeric character sequence can be assigned to a special key (S1...S16).

Using the configuration menu on screen, press 6 for "Change special key layout".

You will be prompted to the enter the special key. Once entered, the following message appears:

```
Enter the sequence and end the sequence using the same
special key
```

Once you have done this, the message, `layout changed,` appears and then you will return to the configuration menu.

INFORMATION
Characters shown on screen may be different to those you have entered. This is done to avoid any unwanted reactions by the PC, triggered by the keyboard.

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Teach-in layout from the external keyboard

If you require a function which is already defined on an external keyboard, you can transfer the code sequence to the integrated keyboard.



NOTICE
Assign specific, predefined keys or special keys (S1...S16) to avoid any unexpected effects!

Press 7 for "Teach-in key layout from the external keyboard" from the configuration menu.

Once requested, press the key to be re-assigned on the integrated keyboard. The following message appears:

```
Enter the meaning on the external keyboard, end with the key
to be re-assigned
```

Press the external key whose code sequence you want to transfer, and then the key to be re-assigned.
The message, `layout changed,` appears. Once again:

```
Press the key to be re-assigned on the integrated keyboard
and end with 0 on the external keyboard
```

Repeat the process for each key you want to re-assign.

To end the process, press 0 on the external keyboard.
The configuration menu appears on screen.

Ending the configuration program

To exit from the configuration menu, press 0. The following message appears:

```
Teach-in ended
```

Exit from the word processing program.

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Full configuration using the TC.EXE program

Using the TC.EXE program and the integrated keyboard, you can
- Re-assign each key at each level (0-3),
- Set parameters to determine how the keyboard operates,
- Work interactively with the keyboard controller,
- Work independently of the controller and transfer the configuration via a data carrier.

The keyboard layout for your industrial computer is stored in a configuraton file with the file extension .tc.

Any configuration changes made will be stored in the computer's RAM and once processing has finished, it will then be transferred into the controller's flash memory. This happens once you send the entries to the controller. By exiting the TC.EXE program you can save the new configuration to a data carrier.

In principle, every key on the integrated keyboard can be re-assigned.

NOTICE
Save the settings valid for your operation and keep in a safe place.

Key numbers

The number for each key appears on a matrix as a hexadecimal number (matrix code). Enter number in decimal or C-type. Any number which begins with "0x" or "0X" is interpreted as hexadecimal (digits: 0-9, a-f or A-F). Only those entries lying within the permitted range are valid, any others will be ignored.

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Configuration options

- "User Version" (user-specific version): You can enter a character sequence which represents your configuration.

- „KEY": Each key can be assigned on four levels whereby the "Switch LED" denotes the select key to activate the level.



INFORMATION
LED in the term "Switch LED" refers only to the select function, an actual diode doesn't have to be available. The controller hardware enables a diode to be selected.

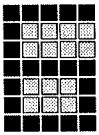
- "Switch LED" (select key): Define which key activates which assignment level. If a key is used as the select key, you can define the properties using the "LED type".
  "Normal" - select function is effective, provided the key is pressed.
  "Locked" - select function is effective once the key has been pressed for the first time. When it is pressed for the second time, it is no longer effective, i.e. toggle key
  „Delayed" - select function is effective until the next key is pressed, then it is switched-off.

- „Reserved": You can mark each key as reserved. This means it is possible to enable or disable keys using the password. This has the same effect as the configuration using the integrated program.

- "No teach" (teach-in mode not authorised): You can prevent the teach-in program in the integrated program from being accessed. If the flag "No Teach" is set and you enter the password you disable all keys highlighted as reserved. If you enter the password for a second time, the lock is removed (toggle). The status remains after power down.

- "Password" (password, key combinations for "teach-in"):
  The key sequence which activates the teach-in mode with the integrated program. If teach-in is not authorised, the password is used to disable and enable reserved keys.

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- "Buzz": Used to create an audible signal for the switch-on process or when a key is pressed which is not permitted or not defined. In addition a signal can be created each time a key is pressed.

- "Auto repeat" (repetition rate for keys pressed and held down): The value 0 will prevent any repetition occurring. In most computers the rate is set in the BIOS set up. If you want to prevent the computer-BIOS overwriting the values in the keyboard controller you need to set the flag "fix Auto repeat". The computer-BIOS will only affect the external keyboard and not the integrated one.

- "Nonexistent keys": You can define which keys are not available on the intergrated keyboard of your computer and monitor. If you have defined which postions on the key matrix are not occupied, the controller can eliminate any keyboard conflicts more easily.

- "Crossover (crossing) diodes": If diodes are connected in series with the keys, keyboard conflicts can be avoided. You can tell the controller whether such diodes are available. Membrane keypads on the whole do not have these diodes.

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Calling-up codes

You can call up the matrix code, "Make" code, "Break" code and scan code for the keys

The controller requires a character to indicate when input starts and ends. Use a start/end key which you are not going to requrie, e.g. the Esc key.

After entering the call-up command the following message appears and the controller is connected, e.g.:

```
connected with: TC-MFII v 1.0 © pilz GmbH, 1999 – produced 00/0000
User version: SLA GR PILZ 32 keys + 10 F-keys
Please press key to finish CODES-mode (you've got 1 s)
```

Press the start/end key **within 1 second** e.g. Esc. The code for the key appears. If you do not press the key within the permitted time range, the following message appears:

```
No key pressed, aborting ...
```

Matrix code

The number corresponds to the number of the key on the matrix. This is valid for the "KEY selection".

When a:\> appears, enter:

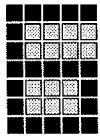
```
tc -m
```

Press the start/end key within 1 second.
A matrix code appears for each key pressed on the integrated keyboard.
Example: 0xec ....
0xec indicates that the following number is a matrix code.

End the input using the Esc-key.
The prompt a.\> appears again.

INFORMATION
The matrix code for a key which is not present on an AT-T keyboard can be found in the tables in the Appendix.

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"Make" codes and "Break" codes

Codes sent by the controller when a key is pressed and released appear in the input fields in the dialogue box "KEY".

When a:\> appears, enter:

```
tc -c
```

Press the start/end key within 1 second.
The "Make" and "Break" codes then appear for each key which is pressed on the intergated keyboard.
Example: 0x1c 0xf0 0x1c

End the call up by pressing Esc.
a.\> appears again

Scan code

The computer sends this code for processing with the controller program.

When a:\> appears, enter:

```
tc -p
```

Press the start/end key within 1 second.
A scan code is displayed for each key pressed on the intergated keyboard.
Example: 0x1e 0x9e

End the call up by pressing Esc.
a.\> appears again.

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Calling-up the TC.EXE program



CAUTION!

Ensure that the computer is not controlling or monitoring any plant or installation before you make any configuration changes using the program.

Three options are available to change the configuration:

- Load the configuration file from the disk directly (or the hard drive) by entering the path and filename*.tc at the prompt. This will overwrite the memory contents of the keyboard controller.
- Firstly call up the program and enter the path and the filename *.tc. The configuration file is entered in the computer's RAM.
- Call up the program, connect the controller and poll the current contents of the memory. These values are entered in the computer's RAM.

Overwriting the contents of the controller's memory with the configuration file

At x:\> (x is for the drive where the program and confguration file are located, when the system is supplied it is set as "a" drive) enter:

```
tc directory\filename.tc
```

Example: F10\gb.tc for the PICOMP SLA with 10 function keys and a British keyboard.
If the configuration file is in a different path to that of the program, enter the exact path after `tc`. Example:

```
c:\>tc a:\F10\gb.tc
```

Loading the configuration file into the RAM

By loading the configuration file into the RAM you can change the configuration and save to the same file or a new one without necessarily overwriting the contents of the controller memory.

At a:\> enter:

```
tc
```


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Call-up starts the interactive mode. The basic display appears on screen. On the upper edge of the screen is the menu bar

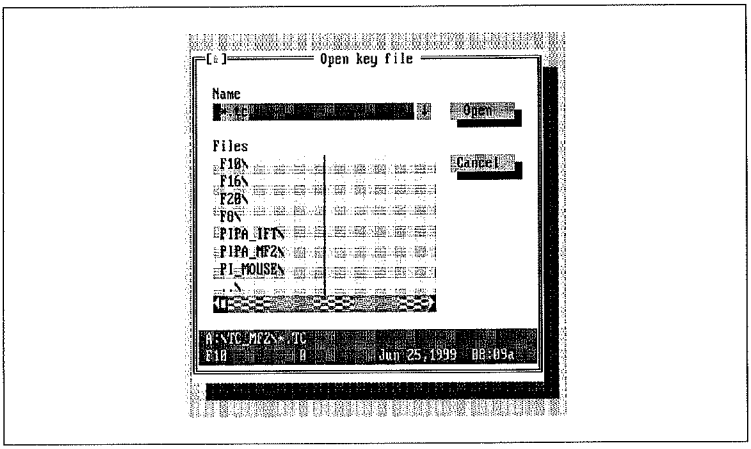
`File  Modify  Controller`

and on the lower the function bar

`F1 Help  Alt-H Help  Alt-X Exit`

INFORMATION
The menu bar is visible from the dialogue boxes but the menus are not available.

Call up the "File" menu by pressing Alt+F and select "Open". The dialogue box „OPEN KEY FILE" appears. The status bar contains the path, the file size and the date the file was created. The command button "Open" is highlighted.



- Enter the path and the name of the configuration file *.tc which corresponds to your industrial computer and monitor and click "Open".

- **Or** select the directory from the list.
  The directory name is transferred into the field. Click "Open".
  A list of configuration files appears in the selection field "Files" as (language shortcut)*.tc, e.g. gb.tc.

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Select gb.tc. This corresponds to the English keyboard. Your selection appears in the field and the status bar. The command button "Open" is highlighted.

Press the return key. The empty base screen appears.

The configuration file is now active, i.e. loaded into the computer"s RAM.

INFORMATION
We recommend that you make a back-up copy of the existing keyboard controller configuration. Select "Save" from the "File" menu if you want to retain the name of your file or select "Save as" if you want to rename the file.

Transferring the contents of the controller's memory into the RAM

To establish the current key configuration and to be able to process it, poll the contents of the controller's memory and transfer this to the RAM. Ensure the controller is connected so that the program recognises this.

If you have loaded the correct configuration file.
Call up the controller menu by pressing Alt+C, select "Connect" and confirm.

Call up the controller menu and select "Query all".

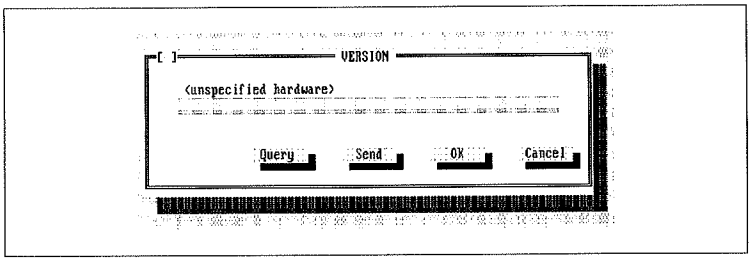
The contents of the controller menu is loaded into the RAM.

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Defining user-specific version name

This function can be used to help you manage any keyboard configurations. You can give a separate name as "User" version. However the software version and the programming date of the controller (month/year) are linked to the controller and cannot be changed.

Call up the "Modify" menu by pressing Alt+M and select "Version". The dialogue box "VERSION" appears. It contains the message "Unspecified hardware" and an empty input field.



Enter a name in the input field. Click "OK".

You can also query the controller for the "user version" and then change it. Click "Query".

If a box "Error" appears with the message:

```
No controller (May not be connected)
```

the controller is not connected. Confirm the message by pressing the return key and leave the dialogue box "VERSION" by pressing Esc.

Call up the controller menu by pressing Alt+C and select "Connect". The box "Controller" appears and states the hardware version in the field under "User Text", e.g.:

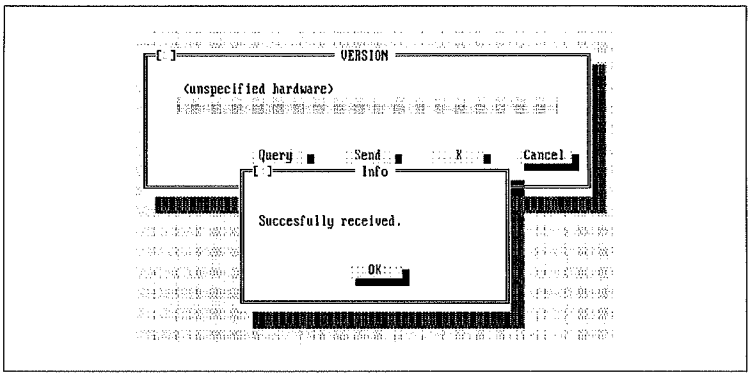
```
Version: TC-MFII v1.0 © pilz GmbH, 1998 – produced 00/0000
User Text:      SLA GB PILZ 32 keys + 10 F-keys.
```

Acknowledge this message by pressing the return key.

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Call up the “Modify” menu and select “Version”. The dialogue box “VERSION” appears but it is not empty.

If you click on “Query”, the message “Successfully received” appears. Acknowledge the message by pressing the return key.



Change the text in the “user test” field. Click “OK”. The base screen appears.

You can tell the controller your “User-Version” by clicking “Send” in the dialogue box. If the controller is connected, the name is transferred to the non-volatile memory, otherwise a dialogue box “Error” appears with an error message.

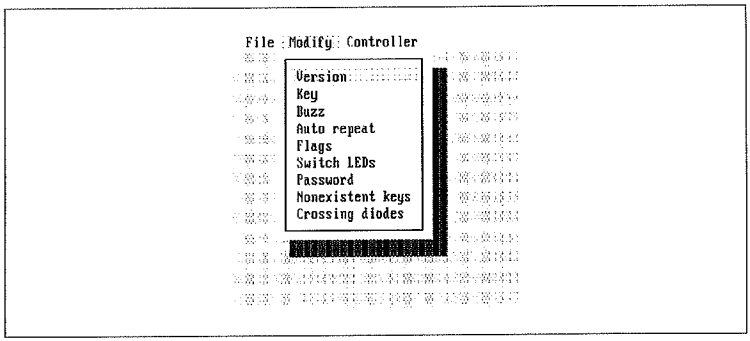
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Changing the configuration

By using the "Modify" menu you can change values in the RAM - after clicking "OK" in the dialogue box. You can save the current contents of the RAM to floppy disk or your hard disk using the "File" menu.

Individual entries from "Modify" can be obtained or sent to the controller using the "Send" and "Query" functions.

Call up the "Modify" menu by pressing Alt+M.



Assigning keys

The configuration for the key consists of the
- Basic configuration for the required levels
- Extended configuration in each of the levels.

The keys defined as Switch 1 and Switch 2 act as the select keys for the levels. These will be selected as "LED number" in the extended configuration, see KEY (detailled):
Level 0: "physical: (no Switch)" - neither of the switch keys is active
Level 1: "physical: Switch1" - only Switch1 is active.
Level 2: "physical: Switch2" - only Switch2 is active.
Level 3: "physical: Switch1 Switch2" - both Switch1 and Switch2 are active.

The "logical" status normally agrees with the "physical" status.

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"Make" code sequences are defined for each level, i.e. a sequence which is sent from the controller each time a key is pressed.

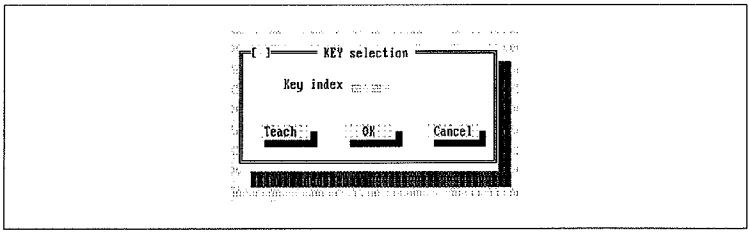
Defining the sequences is very easy using the "Teach-in" function. You only need to press keys on the external keyboard and the "Make" codes will be transferred. Not all sequences can be programmed in this way and the sequence length is limited to 10 characters.

The controller usually generates the "Break" code automatically, however you can define the codes if required (see extended configuration, "Detailled"). The length of the sequence must not exceed 31 characters.

Calling-up a key

The following description uses F5 as the example.

Choose "Key" from the "Modify" menu.
The dialogue box "KEY SELECTION" appears.
"Key index" is empty.



The cursor is flashing in the input field. Enter the matrix code in the field. Valid values are 0 to 127 (0x7f). Invalid numbers will not be accepted by the controller.

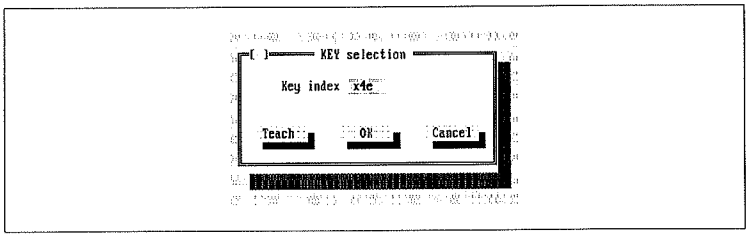
If you do not know the number, you can query using the "Teach-in".

Click "Teach". The dialogue box "SELECT KEY BY TEACH" appears with the request :

```
Please press key to select.
```


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Press the key whose configuration you want to change, e.g. F5.
The matrix code for the key appears in the "Key index": 0x4e.



Click "OK". The dialogue box "KEY" appears. The fields are empty when this is called up.

Configuration teach-in

The controller requires a character to signify when input begins and when it ends. Use a key which you do not require, e.g. the Esc key. Should this key be part of the sequence to be defined, you must use a different key. Remember the key - Esc is only shown as * in the dialogue!

Special features of teach-in:

- Do not use control keys from TC.EXE for start and end keys (**Shift, Ctrl-, Alt-,** ...)
- If a sequence is to be defined with select keys, the following order is important: **press the select key and keep held down— press the key — release the key — release the select key**. Only by doing this will Auto-repeat on the select keys be ignored and Switch1 or Switch2 detected.
- Press the keys quickly, otherwise it could be entered more than once (auto-repeat-function).
- Only with the select keys Switch1 and Switch2 is the auto-repeat function suppressed at the beginning of the sequence. If you press other keys for too long, the "Make" sequence will have to be edited by hand or teach-in repeated.

Go to the level which you want to re-assign (use the tab key).
The level is 0 in the following example.

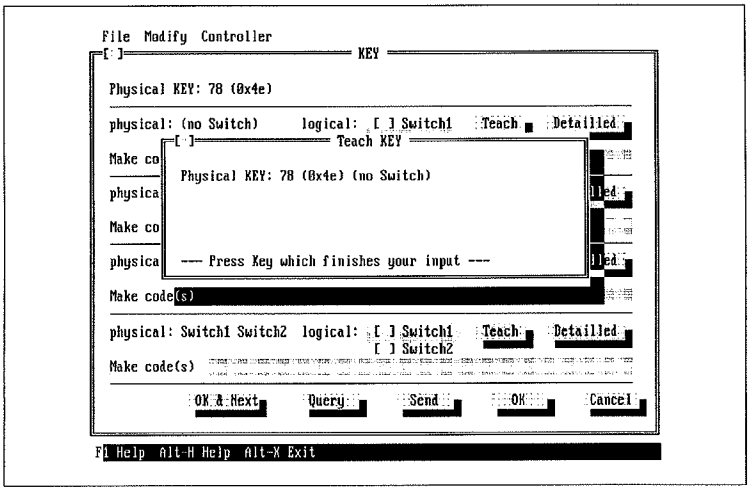
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Click "Teach". The dialogue box "TEACH KEY" appears with the message::

Physical KEY: 78 (0x4e) (no Switch)

and the request:

Press Key which finishes your input



Press the start/end key. The input field appears with the prompt:

Please input your sequence, end with key *.

Press the required sequences on the external keyboard. Their characters appear in the input field as clear text. If it is not an ASCII-character it will appears as '*'

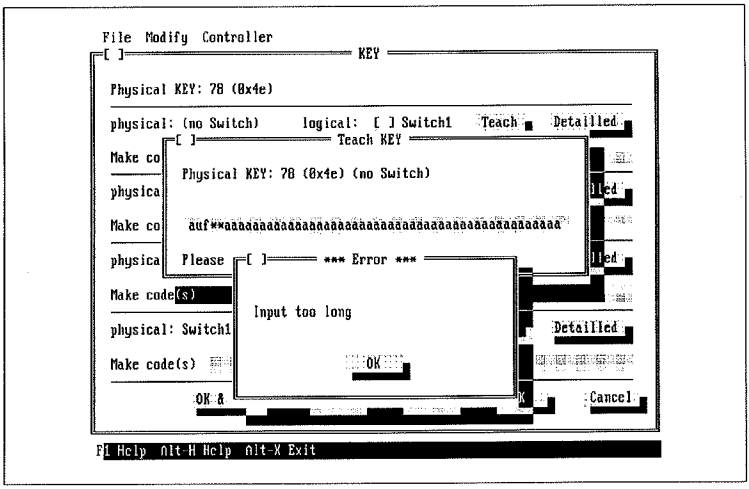
When you have finished, press the start/end key.

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If you have made a mistake you cannot delete this. Instead write a whole line of characters using an **insignificant** key, e.g. **a** - a triangle appears at the end of the line to indicate that the contents continues.

Continue to write until the box "Error" appears with the message:

`Input too long`



Acknowledge by clicking "OK". The dialogue box "KEY" appears and you can begin entering once more.

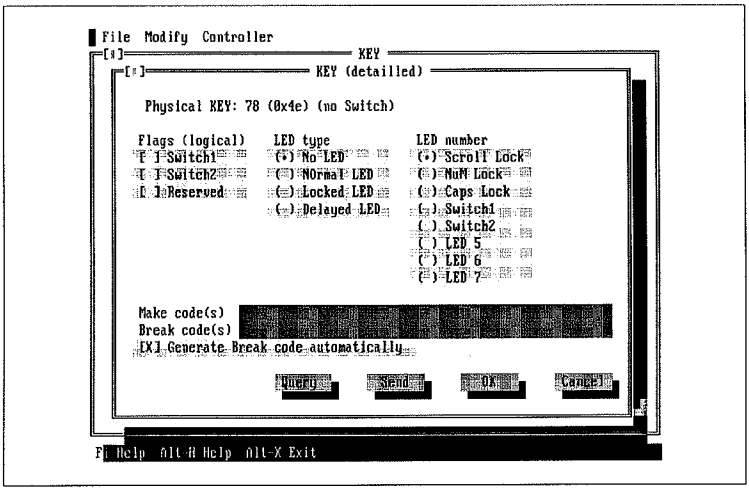
The stored sequence of the received codes is translated into MF II codes, any Switch1- and Switch2 codes included are converted into "logical"-flags and the sequence is split into "Make" and "Break" codes.

Repeat the process for all keys and levels you want to re-assign. If you click on "OK & Next", you will go to the next key on the matrix.

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Extended configuration on one level

In the dialogue box “KEY” in the required level click on “Detailled”.
The dialogue box “KEY (detailled)” appears:



Entering assignments manually

If you know the “Make” and “Break” codes, then teach-in is not required.
Click on “Detailled” in the level you want to change.

Using the tab key go to the input field and enter the “Make” code directly.

If there is a reason why a “Break” code is not sent, leave the line empty.

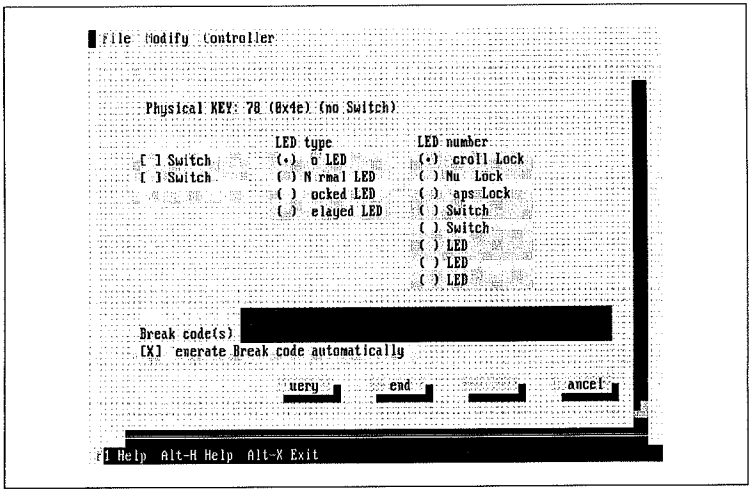
If the controller does not need to to automatically generate the “Break”-Code from the “Make” code, remove the highlighting from the selection field “Generate Break code automatically” (using the space bar).

Confirm by clicking “OK”.

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Highlighting keys as reserved

Call up the dialogue box “KEY” for the required key and select “Detailled” from the level you require.



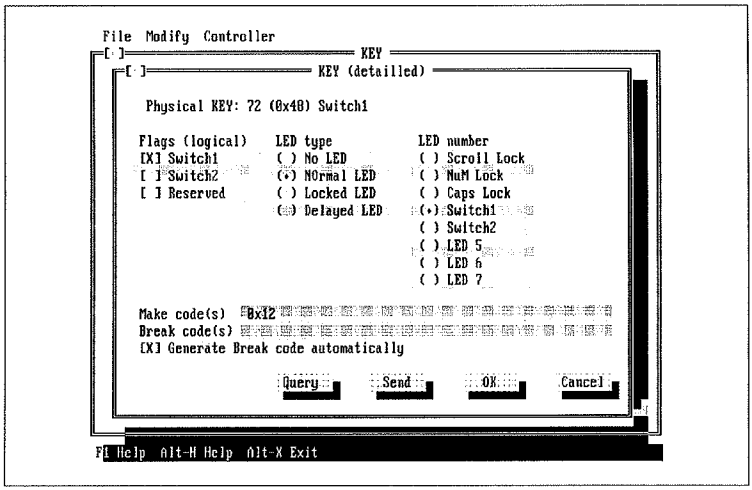
In the column “Flags (logical)” highlight the selection field “Reserved”. Confirm by clicking “OK”.

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Defining keys with select function

In general the shift-key and the control-key have a select function.

Call up the dialogue box “KEY” for the required key and click “Detailled”



In the column “LED number” highlight the selection field (using the space bar)
- “Switch1”, if it concerns the 1st select key
- “Switch2”, if it concerns the 2nd select key

(also refer to the examples on page 6-43 onwards).

Confirm by clicking “OK”.

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Defining the properties for the select keys

INFORMATION
You only require this function for a completely new configuration.

Call up the dialogue box "KEY" for the required key and click "Detailled".

Highlight "LED type" in the column with the one of the following properties using the space bar :

- The select function is effective providing the key is pressed, highlight as "Normal LED".
- The select function is effective on the first press and removed on the second press, highlight as "Locked LED".
- The select function is effective until the corresponding key is pressed, highlight as "Delayed LED".

Confirm by clicking "OK".

Linking select function to standard LEDs

INFORMATION
This function is only required for a completely new configuration.

The active level of the key is defined by the status of Switch1 and Switch2, the select keys with properties give rise to "Normal LED" and function as "Switch1 LED" or "Switch2 LED".

Alternatively you can control the status from the computer by linking the status to the standard LEDs (NumLock, CapsLock or ScrollLock). NumLock is designed, for example, for keyboards where the number block on the letter keys is already assigned as on laptop computers.

INFORMATION
For MF II-compatibility the "...Lock"-LEDs are a necessity and therefore on the system. ScrollLock and CapsLock have no effect on the controller. Do not assign these LEDs!

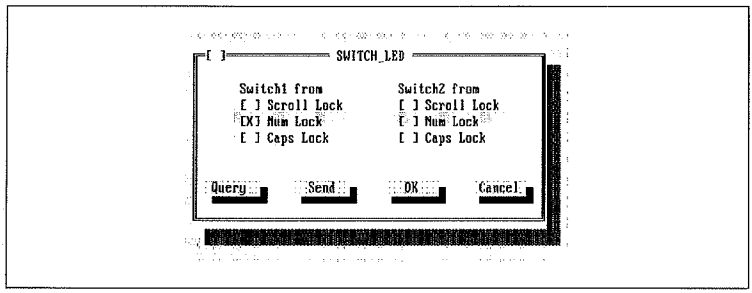
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The following settings must be carried out:
- Set the select function to the LED,
- Define the NumLock code and
- Ensure that the NumLock code is also sent.

The following description relates to the example "Switch 1 from NumLock".

Select "Switch LEDs" from the "Modify" menu. The dialogue box "SWITCH LED" appears.

Using the arrow key highlight "NumLock" in the field for "Switch 1". Confirm by clicking "OK".



Now you must define the NumLock code. For this you must use a "Make" code for a key which does not already exist on your system, e.g. the key No. 127 on the matrix.

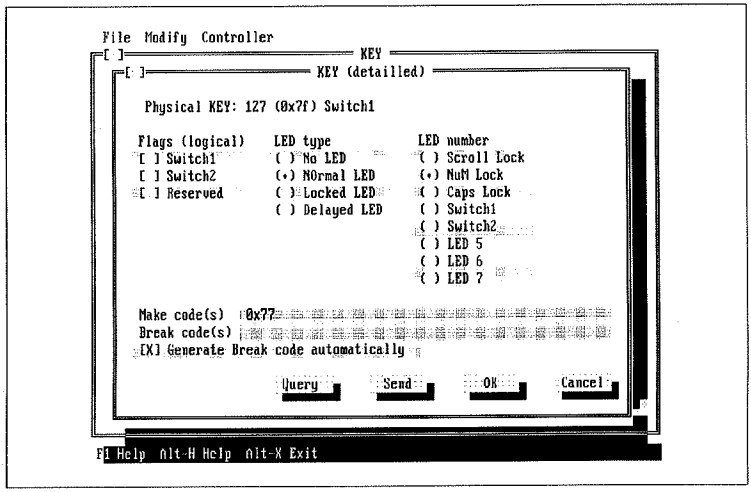
Select "Key" from the "Modify" menu.
The dialogue box "KEY SELECTION" appears.
This contains an empty field "Key index" and the command buttons "Teach", "OK" and "Cancel". The cursor is flashing in the input field.

Enter the Matrix code for key no. 127, 0x7f in the field and click "OK". The dialogue box "KEY" for key 127 appears.

Select level 1 (physical: switch 1) and enter the "Make" code 0x77 in the input field. Alternatively you can use the teach-in function via "Teach-in function for the Make code" for the NumLock-key.

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Click on “Detailled”. The dialogue box “KEY - Detailled” appears. “Normal LED” is selected in the field “LED-type” and “NumLock is selected in the field “LED number”.



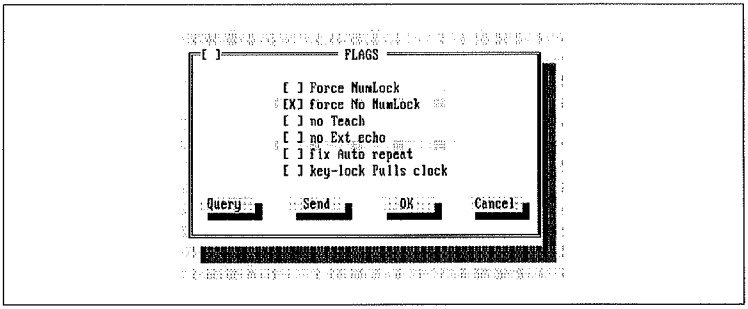
To transfer the new setting to the controller, click “Send”.

Confirm by clicking “OK”. You come back to the dialogue box “KEY SELECTION”. Press “Cancel”.

For the controller to switch on the „NumLock“-LED after start-up (if it was switched off you) will need to select the appropriate field. Select “Flags” from the “Modify” menu. The dialogue box “FLAGS” appears.

Activate the selection field “Force NumLock” , confirm by clicking “OK”.

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Prevent setting the number block function (NumLock)

If the “NumLock” LED should remain switched off after start-up (if “NumLock” was switched off), you must deactivate the “NumLock” function.

Select “Flags” from the “Modify” menu. The dialogue box “FLAGS” appears.

Activate the selection field “force No NumLock”, confirm by clicking “OK”.

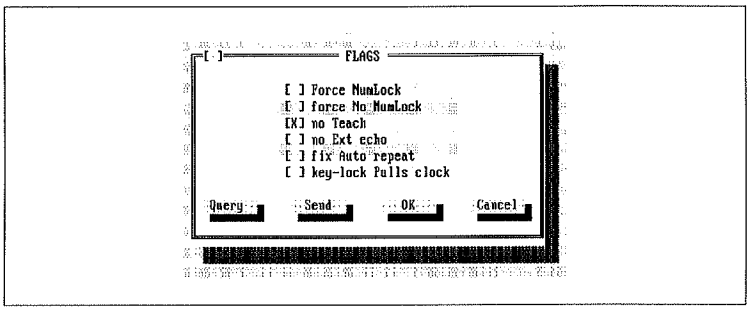
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Teach-in mode not authorised

If you want the integrated keyboard to only operate in normal mode, you must prevent the teach-in mode being accessed using the password. The password is only then valid for disabling and enabling keys.

Select “Flags” from the “Modify” menu. The dialogue box “FLAGS”.

Activate the selection field “No Teach”, confirm by clicking “OK”.



INFORMATION
For security reasons the teach-in mode is not authorised when the controller is supplied. The flag “No Teach” is set in the TC.EXE program.

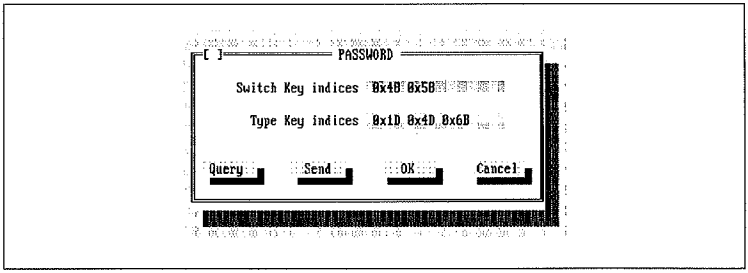
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Operation

Changing the password

You can change the password for the integrated keyboard. This has the same effect as the configuration with the internal program.

Select "Password" from the "Modify" menu. The dialogue box "PASSWORD" appears. The fields are empty.



Enter the key numbers of the select keys in the upper field, in the lower field the key numbers of the number keys. Confirm by clicking "OK".

Setting the repetition rate

If you press a key(s) and keep it held, the "Make" code(s) for the key(s) will be sent after a delay time and at regular intervals from them on until the key is released.

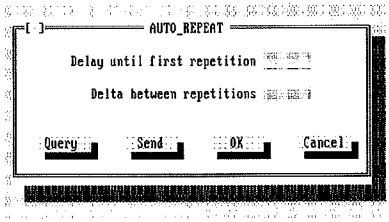
You can set the default setting. The delay can be set between level 0 and 3 and the interval between 0 and 31. (To prevent the setting being overwritten from the BIOS Setup or the operating system you can set the flag "Fix Auto repeat". See suppressing the repeat function).

Select "Auto Repeat" from the "Modify" menu. The dialogue box "AUTO-REPEAT" appears with the fields:

```
Delay until first repetition
Delta between repetitions
```

Enter the required value. If you enter 0 in both fields, the function is switched off.

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Click “Send” to tranfer the new setting to the controller.

You will receive the current setting if you click on “Query” and thefollowing message appears:

`Transmission successful`

Confirm by clicking “OK”. The values appear in the fields.

Suppressing the repeat function

The controller program will ignore the repeat function for keys with a select function. You can switch off this repeat function for any other keys (see above).

To prevent the BIOS automatically switching on the function, set “fix Auto repeat”. Any changes made during this time will affect the external keyboard only and not the integrated keyboard.

Select “Flags” from the “Modify” menu. The dialogue box “FLAGS” appears.

Highlight “fix Auto repeat”. Click “Send” to transfer the new setting to the controller.

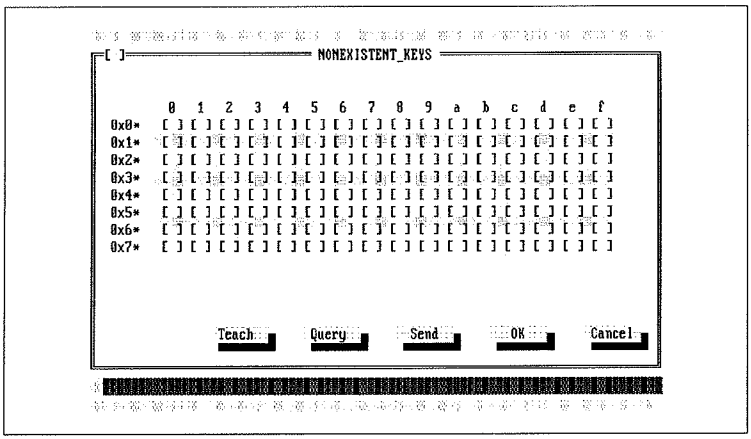
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Teach-in non-existent keys

INFORMATION
You only need this function if you are doing a completely new configuration.

You can define for the controller which keys on your computer and monitor do not exist.

Call up “Modify” menu by pressing Alt+M . Select “Nonexistent Keys”. The dialogue box “NONEXISTENT KEYS” appears.



Click “Teach”. All fields are highlighted and the following prompt appears:

```
Please type each key (one after another), end with typing one
key twice.
```

The highlight will be removed from the fields corresponding to the keys pressed on the integrated keyboard.

Click “Send” and confirm by clicking “OK”.

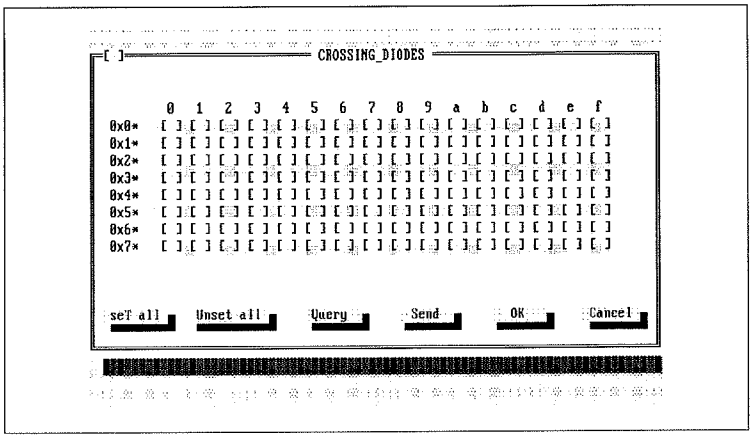
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Teach-in crossover (crossing) diodes

INFORMATION
You only need this function for a full key configuration.

For special applications, diodes are integrated at matrix crosspoints in series with the keys. This means that keys pressed simultaneously can be detected. Most membrane keyboards do not have diodes. In general, keyboards with micro switches have diodes for all keys.

Select "Crossing Diodes" from the "Modify" menu. The dialogue box "CROSSING_DIODES" appears: Confirm by clicking "OK".



If you click "Set all", all fields are highlighted
If you click "Unset all", the highlighted section in all fields will disappear.

Poll the controller to establish whether diodes are integrated at cross points by clicking on "Query". The program reads the tables stored in the controller. The fields are marked with a cross in the table where the diode exists. A message "Successfully received" appears (the controller must be connected).

Confirm by clicking on "OK".

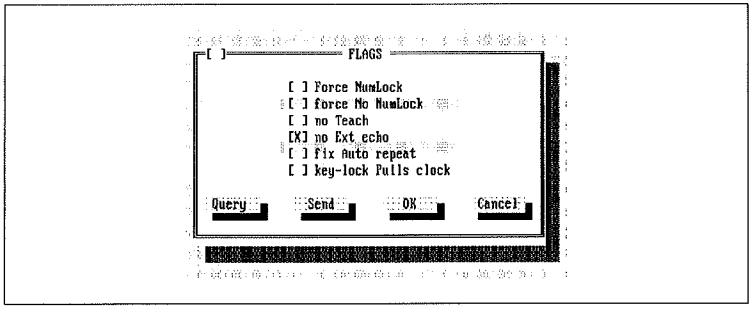
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Suppressing the echo sequence

To detect whether an external keyboard is connected, the controller sends an echo sequence at regular intervals. This is usually harmless, but if in doubt, you can suppress the sequence.

Select “Flags” from the “Modify” menu. The “FLAGS” dialogue box appears.

Activate the selection field “no Ext echo”, confirm with “OK”.



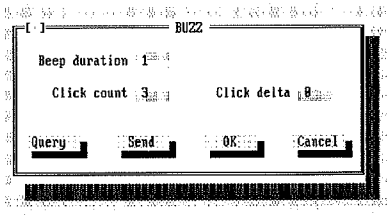
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Setting key signals

You can set an audible signal to sound if a reserved key or a non-reserved key is pressed. The length can be set in levels from 0 ... 15.

You can also set a short click which clicks each time a key is pressed. The number of clicks and the length of the click can be set at 1 of 3 levels. If you enter 0 a short beep will sound instead of a click and this can be set at 1 of 3 levels.

Select "BUZZ" from the "Modify" menu. The dialogue box "BUZZ" apprears.



Enter the required value. If you enter 0 in "Click count", it changes the name in the third field to "click duration" and you can enter a valid value here.

Click "Send" to transfer the new setting to the controller.

If you click "Query" and the following message appears:

`Successfully received`

the setting has been transferred successfully.

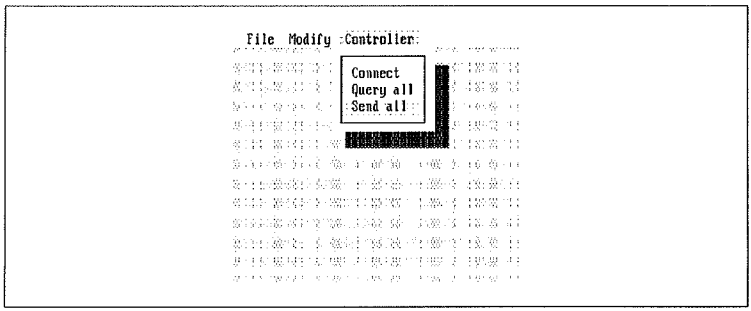
Confirm by clicking on "OK". The values appear in the fields.

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Saving to the controller

By clicking on "Send" in the dialogue boxes, settings can be transferred to the controller, provided it is connected. The new setting overwrites the one stored previously.

You can also transfer the entire contents of the memory to the controller in one step.



Call up the "controller" and select "SEND ALL" from the list.

Messages appear in the box indicating which step the controller is at. If the process takes too long an error message appears, for example:

`Transmit error, receive timeout`

Confirm by clicking on "OK".

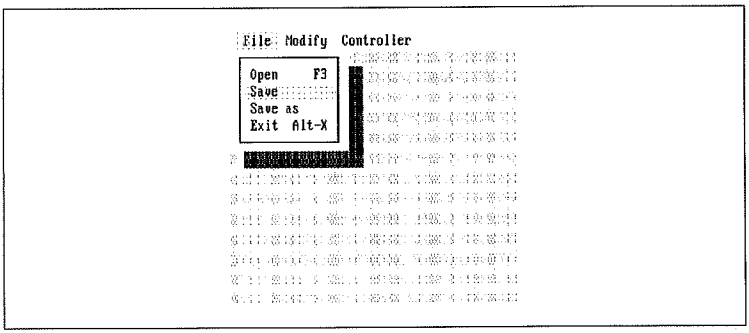
Call up the controller menu, select "Connect" and confirm.

Repeat the "Send all" command.

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Saving to disk

Any changes made to the configuration can be saved to disk (floppy or hard disk). Call up the "File" menu by pressing Alt + F.



If you want to save your new configuration to the working file, select "Save". There is no message to inform you the task is complete.
If you want to save new configurations into a separate file, select "Save as". The dialogue box "SAVE KEY FILE" appears with the entry field "Name" *.tc, the selection field "Files" and the "OK" and "Cancel" buttons.

The cursor flashes in the entry field. The "OK" button is highlighted.

Enter the file name using the extension *.tc and click on "OK". The dialogue disappears and the file is saved to disk.

If you wish to transfer the entire contents of the memory to the controller, use the function "Send all" from the controller menu (see "Save entries to the controller").

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Load layout from the controller into the RAM

If, for example, you want to transfer the current contents of one memory to another, you can read the configuration and save it to disk.
Call up the "Controller menu" by pressing Alt+C and select "Query all". The dialogue box "INFO" appears with the message.

```
Successfully received
```

Confirm by clicking on "OK".

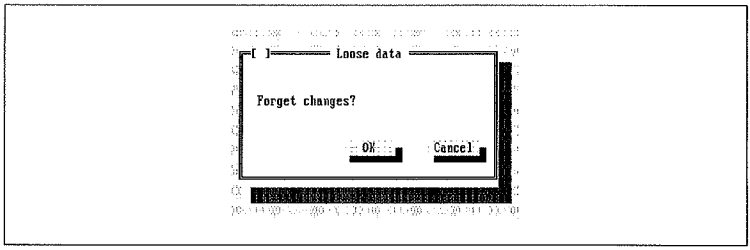
Call up the "File" menu by pressing Alt+F and save the read data to disk under a new name.

Exiting the TC program

When you have completed the entries, press Alt+X. The dialogue box "LOOSE DATA" appears with the message:

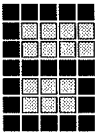
```
Forget changes?
```

If you want to save changes, click "Cancel". The dialogue box disappears from the screen and you can select "Save" from the "File" menu.



If you do not want to save the changes, click "OK". The input screen disappears from view and the TC program has finished.

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Online help

The TC program has a help function which can be called up at all times by pressing F1. Help text is in English.

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Examples

A PIPANEL Keyboard is used in the following examples. Use the examples together with the TC.EXE program.

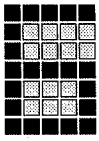
Save the old configuration before making any changes to the settings.

Connect the controller. Read in all the existing keyboard configuration for the controller into the RAM ("Query all").
Save the data under a suitable file name ("Save as"), e.g. PIPANEL.tc.

Save as a work file under a different name, e.g. dummy.tc, so that if "Save" is selected accidently, the file PIPANEL.tc is not overwritten.

If you want to use the old configuration, connect the controller, load the file PIPANEL.tc into the RAM ("File open"). Transfer the contents of the RAM into the controller's non-volatile memory ("Send all").

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Shift and Control as select keys Switch1 and Switch 2

- Shift key KEY 0x44, Make-Code 0x12

  Level 0 (no Switch)
  Flags (logical): --, LED type: Normal, LED number: Switch1
  Make code(s) 0x12, [x] Generate Break code automatically

  Level 1 (Switch1)
  Flags (logical): Switch1, LED type: Normal, LED number: Switch 1
  Make code(s) 0x12, [x] Generate Break code automatically

  Level 2 (Switch2)
  Flags (logical): Switch2, LED type: Normal, LED number: Switch1
  Make code(s): 0x12, [x] Generate Break code automatically

  Level 3 (Switch1 Switch2)
  Flags (logical): Switch1+ Switch2, LED type: Normal, LED number: Switch1
  Make code(s): 0x12, [x] Generate Break code automatically

- Control-Taste KEY 0x71, Make-Code 0x14:

  Level 0 (no Switch)
  Flags (logical): --, LED type: Normal, LED number: Switch2
  Make code(s) 0x14, [x] Generate Break code automatically

  Level 1 (Switch1)
  Flags (logical): Switch1, LED type: Normal, LED number: Switch2
  Make code(s) 0x14, [x] Generate Break code automatically

  Level 2 (Switch2)
  Flags (logical): Switch2, LED type: Normal, LED number: Switch2
  Make code(s): 0x14, [x] Generate Break code automatically

  Level 3 (Switch1 Switch2)
  Flags (logical): Switch1+ Switch2, LED type: Normal, LED number: Switch2
  Make code(s): 0x14, [x] Generate Break code automatically

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- Example key A, KEY 0x4b, Make-Code 0x1c:

  Level 0 (no Switch)
  Flags (logical): --, LED type: No LED, LED number: --
  Make code(s) 0x1c, [x] Generate Break code automatically

  Level 1 (Switch1)
  Flags (logical): Switch1, LED type: No LED, LED number: --
  Make code(s) 0x1c, [x] Generate Break code automatically

  Level 2 (Switch2)
  Flags (logical): Switch2, LED type: No LED, LED number: --
  Make code(s): 0x1c, [x] Generate Break code automatically

  Level 3 (Switch1 Switch2)
  Flags (logical): Switch1+ Switch2, LED type: No LED, LED number: --
  Make code(s): 0x1c, [x] Generate Break code automatically

- Example key I/J, KEY 0x1a, Make-Code 0x43/0x3b, J with Control pressed:

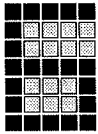
  Level 0 (no Switch)
  Flags (logical): --, LED type: No LED, LED number: --
  Make code(s) 0x43, [x] Generate Break code automatically

  Level 1 (Switch1)
  Flags (logical): Switch1, LED type: No LED, LED number: --
  Make code(s) 0x43, [x] Generate Break code automatically

  Level 2 (Switch2)
  Flags (logical): Switch2, LED type: No LED, LED number: --
  Make code(s): 0x3b, [x] Generate Break code automatically

  Level 3 (Switch1 Switch2)
  Flags (logical): Switch1+ Switch2, LED type: No LED, LED number: --
  Make code(s): 0x3b, [x] Generate Break code automatically

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- Example key F1, KEY 0x5b, Make-Code 0x05, with Control: red/RED

  Level 0 (no Switch)
  Flags (logical): --, LED type: No LED, LED number: --
  Make code(s) 0x05, [x] Generate Break code automatically

  Level 1 (Switch1)
  Flags (logical): Switch1, LED type: No LED, LED number: --
  Make code(s) 0x05, [x] Generate Break code automatically

  Level 2 (Switch2)
  Flags (logical): --, LED type: No LED, LED number: --
  Make code(s): 0x2d 0xf0 0x2d 0x44 0xf0 0x44 0x2c 0xf0 0x2c,
  [--] Generate Break code automatically, Break code: --

  Level 3 (Switch1 Switch2)
  Flags (logical): Switch1, LED type: No LED, LED number: --
  Make code(s): 0x2d 0xf0 0x2d 0x44 0xf0 0x44 0x2c 0xf0 0x2c,
  [--] Generate Break code automatically, Break code: --

Force NumLock

You have set the number block function: Modify--> Flags, Field Force NumLock highlighted.

The make code for the NumLock, 0x77, must be given to the controller, it is set via a dummy-key (KEY 127), which can be determined using "Nonexistent keys". You only need to define the dummy key on one level.

- Dummy key, KEY 127, Make-Code 0x77

  Level 0 (no Switch)
  Flags (logical): --, LED type: Normal, LED number: NumLock
  Make code(s) 0x77, [x] Generate Break code automatically

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Switch2 from NumLock

You have highlighted the "NumLock"-LED under "Switch2 from" in the "Switch LEDs" dialogue box.

In the example, **F12** is the simulation key for NumLock as this does not exist on the PIPANEL keyboard. Page up key is defined as the **A**-key.

Due to the connection an empty Make Code for Switch2 is set for dummy key 126, the normal Control key is redefined as a normal key instead of a Switch key. In doing so the I/J-conversion is deactivated whereby J is always given if NumLock is selected.

- NumLock-code auf F12, KEY 0x62, make-code 0x77:

  Level 0 (no Switch)
  Flags (logical): --, LED type: No LED, LED number: --
  Make code(s) 0x77, [x] Generate Break code automatically

  Level 1 (Switch1)
  Flags (logical): Switch1, LED type: No LED, LED number: --
  Make code(s) 0x77, [x] Generate Break code automatically

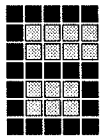
  Level 2 (Switch 2)
  Flags (logical): --, LED type: No LED, LED number: --
  Make code(s): 0x77, [x] Generate Break code automatically

  Level 3 (Switch1 Switch2)
  Flags (logical): Switch1 + Switch2, LED type: No LED, LED number: --
  Make code(s): 0x77, [x] Generate Break code automatically

- Dummy key, KEY 126, empty Make-Code

  Level 0 (no Switch)
  Flags (logical): --, Make code: --, LED type: Normal, LED number: Switch2, [x] Generate Break code automatically

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- Control key KEY 0x71, make-code 0x14

  Level 0 (no switch)
  Flags (logical): --, LED type: No LED, LED number: --
  Make code(s) 0x14, [x] Generate Break code automatically

  Level 1 (switch1)
  Flags (logical): Switch1, LED type: No LED, LED number: --
  Make code(s) 0x14, [x] Generate break code automatically

  Level 2 (switch2)
  Flags (logical): Switch2, LED type: No LED, LED number: --
  Make code(s): 0x14, [x] Generate Break code automatically

  Level 3 (switch1 switch2)
  Flags (logical): Switch1+ Switch2, LED type: No LED, LED number: --
  Make code(s): 0x14, [x] Generate Break code automatically

- Example-key A, KEY 0x4b, make-code 0x1c, with switch2 0xe0 0x75 (arrow up)

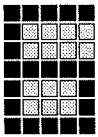
  Level 0 (no Switch)
  Flags (logical): --, LED type: No LED, LED number: --
  Make code(s) 0x1c, [x] Generate Break code automatically

  Level 1 (Switch1)
  Flags (logical): Switch1, LED type: No LED, LED number: --
  Make code(s) 0x1c, [x] Generate Break code automatically

  Level 2 (Switch2)
  Flags (logical): Switch2, LED type: No LED, LED number: --
  Make code(s): 0x75, [x] Generate Break code automatically

  Level 3 (switch1 switch2)
  Flags (logical): Switch1+ Switch2, LED type: No LED, LED number: --
  Make code(s): 0x75, [x] Generate Break code automatically

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Notes

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Appendix

Tables for keyboard layout

PICOMP SLA, 8 function keys

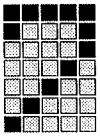
Pilz Key KEY No.	PICOMP SLA F1-F8 HEX	PICOMP SLA F1-F8 Key	Select key None Switch 0	Shift Switch 1	Alpha Switch 2	Shift+Alpha Switch 1+2
KEY 2	0x02					
KEY 4	0x04					
KEY 7	0x07	**F4**	F4	Shift F4	F12	
KEY 8	0x08	↓	↓	Bild ⇓	x	X
KEY 11	0x0B	*	*	⇐ Space	l	L
KEY 13	0x0D	**8**	8	Shift 8	d	D
KEY 14	0x0E	=	=	%	<	<
KEY 18	0x12					
KEY 20	0x14					
KEY 23	0x17	**F3**	F3	Shift F3	F11	
KEY 24	0x18	**ALT**	ALT	ALT	ALT	ALT
KEY 27	0x1B	**F3**	F3	F6	k	K
KEY 29	0x1D	**7**	7	Shift 7	c	C
KEY 30	0x1E	**0**	0	INS	r	R
KEY 36	0x24					
KEY 39	0x27	**F6**	F6	Shift F6	F14	
KEY 40	0x28	**ALPHA**				
KEY 43	0x2B	**2**	2	Shift 2	n	N
KEY 45	0x2D	**F2**	F2	F7	f	F
KEY 46	0x2E	-	-	/	t	T
KEY 50	0x32					
KEY 52	0x34					
KEY 55	0x37	**F1**	F1	Shift F1	F11	
KEY 56	0x38	→	→	END	w	W
KEY 59	0x3B	**5**	5	Shift 5	i	I
KEY 61	0x3D	**F1**	F1	F6	a	A
KEY 62	0x3E	+	+	,	q	Q
KEY 68	0x44					

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Appendix

Pilz Key KEY No.	PICOMP SLA F1-F8		Select key None Switch 0	Shift Switch 1	Alpha Switch 2	Shift+Alpha Switch 1+2
	HEX	**Key**				
KEY 71	0x47	**F5**	F5	Shift F5	F13	
KEY 72	0x48	**Shift**	Shift			
KEY 75	0x4B	**1**	1	Shift 1	m	M
KEY 77	0x4D	**9**	9	Shift 9	e	E
KEY 78	0x4E	**F5**	F5	F10	s	S
KRY 82	0x52					
KEY 84	0x54					
KEY 87	0x57	**F2**	F2	Shift F2	F10	
KEY 88	0x58	**Ctrl**	Ctrl	Ctrl	Ctrl	Ctrl
KEY 91	0x5B	**6**	6	Shift 6	j	J
KEY 93	0x5D	**ESC**	ESC	\	b	B
KEY 94	0x5E	⇔	⇔	Shift ⇔	>	>
KEY 100	0x64					
KEY 103	0x67	**F7**	F7	Shift F7	F15	
KEY 104	0x68	**.**	.	DEL	y	Y
KEY 107	0x6B	**3**	3	Shift 3	o	O
KEY 109	0x6D	**:**	:	Space	g	G
KEY 110	0x6E	↑	↑	⇑ Bild	u	U
KEY 116	0x74					~~(27)!~~
KEY 119	0x77	**F8**	F8	Shift F8	F16	
KEY 120	0x78	**Enter**	Return	?	z	Z
KEY 123	0x7B	**F4**	F4	F9	p	P
KEY 125	0x7D	**4**	4	Shift 4	h	H
KEY 126	0x7E	←	←	Home	v	V

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PICOMP SLA, 10 function keys

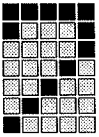
Pilz Key KEY No.	PICOMP SLA F1-F10 HEX	Key	Select key None Switch 0	Shift Switch 1	Alpha Switch 2	Shift+Alpha Switch 1+2
KEY 2	0x02					
KEY 4	0x04					
KEY 7	0x07	**F4**	F4	Shift F4	F14	
KEY 8	0x08	↓	↓	Bild ⇓	x	X
KEY 11	0x0B	*	*	⇐ Space	l	L
KEY 13	0x0D	**8**	8	Shift 8	d	D
KEY 14	0x0E	=	=	%	<	<
KEY 18	0x12					
KEY 20	0x14					
KEY 23	0x17	**F3**	F3	Shift F3	F13	
KEY 24	0x18	**ALT**	ALT	ALT	ALT	ALT
KEY 27	0x1B	**F3**	F3	F6	k	K
KEY 29	0x1D	**7**	7	Shift 7	c	C
KEY 30	0x1E	**0**	0	INS	r	R
KEY 36	0x24					
KEY 39	0x27	**F6**	F6	Shift F6	F16	
KEY 40	0x28	**ALPHA**				
KEY 43	0x2B	**2**	2	Shift 2	n	N
KEY 45	0x2D	**F2**	F2	F7	f	F
KEY 46	0x2E	**-**	-	/	t	T
KEY 50	0x32					
KEY 52	0x34	**F9**	F9	Shift F9	F19	
KEY 55	0x37	**F1**	F1	Shift F1	F11	
KEY 56	0x38	→	→	END	w	W
KEY 59	0x3B	**5**	5	Shift 5	i	I
KEY 61	0x3D	**F1**	F1	F6	a	A
KEY 62	0x3E	**+**	+	,	q	Q
KEY 68	0x44					
KEY 71	0x47	**F5**	F5	Shift F5	F15	
KEY 72	0x48	**Shift**	Shift			

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Appendix

Pilz Key KEY No.	PICOMP SLA F1-F10 HEX	PICOMP SLA F1-F10 Key	Select key None Switch 0	Shift Switch 1	Alpha Switch 2	Shift+Alpha Switch 1+2
KEY 75	0x4B	**1**	1	Shift 1	m	M
KEY 77	0x4D	**9**	9	Shift 9	e	E
KEY 78	0x4E	**F5**	F5	F10	s	S
KRY 82	0x52					
KEY 84	0x54	**F10**	F10	Shift F10	F20	
KEY 87	0x57	**F2**	F2	Shift F2	F12	
KEY 88	0x58	**Ctrl**	Ctrl	Ctrl	Ctrl	Ctrl
KEY 91	0x5B	**6**	6	Shift 6	j	J
KEY 93	0x5D	**ESC**	ESC	\	b	B
KEY 94	0x5E	⇔	⇔	Shift ⇔	>	>
KEY 100	0x64					
KEY 103	0x67	**F7**	F7	Shift F7	F17	
KEY 104	0x68	**.**	.	DEL	y	Y
KEY 107	0x6B	**3**	3	Shift 3	o	O
KEY 109	0x6D	**:**	:	Space	g	G
KEY 110	0x6E	↑	↑	⇑ Bild	u	U
KEY 116	0x74					~~(27)~~
KEY 119	0x77	**F8**	F8	Shift F8	F18	
KEY 120	0x78	**Enter**	Return	?	z	Z
KEY 123	0x7B	**F4**	F4	F9	p	P
KEY 125	0x7D	**4**	4	Shift 4	h	H
KEY 126	0x7E	←	←	Home	v	V

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PICOMP SLA, 16 function keys

Pilz Key KEY No.	PICOMP SLA F1-F16		Select key			
	HEX	Key	None Switch 0	Shift Switch 1	Alpha Switch 2	Shift+Alpha Switch 1+2
KEY 2	0x02					
KEY 4	0x04	**F12**	F12	Shift F12		
KEY 7	0x07	**F4**	F4	Shift F4		
KEY 8	0x08	↓	↓	Bild ⇓	x	X
KEY 11	0x0B	*	*	⇐ Space	l	L
KEY 13	0x0D	**8**	8	Shift 8	d	D
KEY 14	0x0E	=	=	%	<	<
KEY 18	0x12					
KEY 20	0x14	**F11**	F11	Shift F11		
KEY 23	0x17	**F3**	F3	Shift F3		
KEY 24	0x18	**ALT**	ALT	ALT	ALT	ALT
KEY 27	0x1B	**F3**	F3	F6	k	K
KEY 29	0x1D	**7**	7	Shift 7	c	C
KEY 30	0x1E	**0**	0	INS	r	R
KEY 36	0x24	**F14**	F14	Shift F14		~~(17)~~
KEY 39	0x27	**F6**	F6	Shift F6		
KEY 40	0x28	**ALPHA**				
KEY 43	0x2B	**2**	2	Shift 2	n	N
KEY 45	0x2D	**F2**	F2	F7	f	F
KEY 46	0x2E	-	-	/	t	T
KEY 50	0x32					
KEY 52	0x34	**F9**	F9	Shift F9		
KEY 55	0x37	**F1**	F1	Shift F1		
KEY 56	0x38	→	→	END	w	W
KEY 59	0x3B	**5**	5	Shift 5	i	I
KEY 61	0x3D	**F1**	F1	F6	a	A
KEY 62	0x3E	+	+	,	q	Q
KEY 68	0x44	**F13**	F13	Shift F13		~~(0F)~~
KEY 71	0x47	**F5**	F5	Shift F5		
KEY 72	0x48	**Shift**	Shift			

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Appendix

Pilz Key KEY No.	PICOMP SLA F1-F16 HEX	PICOMP SLA F1-F16 Key	Select key None Switch 0	Shift Switch 1	Alpha Switch 2	Shift+Alpha Switch 1+2
KEY 75	0x4B	**1**	1	Shift 1	m	M
KEY 77	0x4D	**9**	9	Shift 9	e	E
KEY 78	0x4E	**F5**	F5	F10	s	S
KRY 82	0x52					
KEY 84	0x54	**F10**	F10	Shift F10		
KEY 87	0x57	**F2**	F2	Shift F2		
KEY 88	0x58	**Ctrl**	Ctrl	Ctrl	Ctrl	Ctrl
KEY 91	0x5B	**6**	6	Shift 6	j	J
KEY 93	0x5D	**ESC**	ESC	\	b	B
KEY 94	0x5E	⇔	⇔	Shift ⇔	>	>
KEY 100	0x64	**F15**	F15	Shift F15		~~(1F)!~~
KEY 103	0x67	**F7**	F7	Shift F7		
KEY 104	0x68	**.**	.	DEL	y	Y
KEY 107	0x6B	**3**	3	Shift 3	o	O
KEY 109	0x6D	**:**	:	Space	g	G
KEY 110	0x6E	↑	↑	⇑ Bild	u	U
KEY 116	0x74	**F16**	F16	Shift F16		~~(27)!~~
KEY 119	0x77	**F8**	F8	Shift F8		
KEY 120	0x78	**Enter**	Return	?	z	Z
KEY 123	0x7B	**F4**	F4	F9	p	P
KEY 125	0x7D	**4**	4	Shift 4	h	H
KEY 126	0x7E	←	←	Home	v	V

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PICOMP SLA, 20 function keys

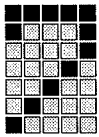
Pilz Key KEY No.	PICOMP SLA F1-F20		Select key			
	HEX	Key	None Switch 0	Shift Switch 1	Alpha Switch 2	Shift+Alpha Switch 1+2
KEY 2	0x02	**F20**	F20	Shift F20		~~(47)~~
KEY 4	0x04	**F12**	F12	Shift F12		
KEY 7	0x07	**F4**	F4	Shift F4		
KEY 8	0x08	↓	↓	Bild ⇓	x	X
KEY 11	0x0B	*	*	⇐ Space	l	L
KEY 13	0x0D	**8**	8	Shift 8	d	D
KEY 14	0x0E	=	=	%	<	<
KEY 18	0x12	**F19**	F19	Shift F19		~~(3F)~~
KEY 20	0x14	**F11**	F11	Shift F11		
KEY 23	0x17	**F3**	F3	Shift F3		
KEY 24	0x18	**ALT**	ALT	ALT	ALT	ALT
KEY 27	0x1B	**F3**	F3	F6	k	K
KEY 29	0x1D	**7**	7	Shift 7	c	C
KEY 30	0x1E	**0**	0	INS	r	R
KEY 36	0x24	**F14**	F14	Shift F14		~~(17)~~
KEY 39	0x27	**F6**	F6	Shift F6		
KEY 40	0x28	**ALPHA**				
KEY 43	0x2B	**2**	2	Shift 2	n	N
KEY 45	0x2D	**F2**	F2	F7	f	F
KEY 46	0x2E	-	-	/	t	T
KEY 50	0x32	**F17**	F17	Shift F17		~~(2F)~~
KEY 52	0x34	**F9**	F9	Shift F9		
KEY 55	0x37	**F1**	F1	Shift F1		
KEY 56	0x38	→	→	END	w	W
KEY 59	0x3B	**5**	5	Shift 5	i	I
KEY 61	0x3D	**F1**	F1	F6	a	A
KEY 62	0x3E	+	+	,	q	Q
KEY 68	0x44	**F13**	F13	Shift F13		~~(0F)~~
KEY 71	0x47	**F5**	F5	Shift F5		
KEY 72	0x48	**Shift**	Shift			

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Appendix

Pilz Key KEY No.	PICOMP SLA F1-F20		Select key None	Shift	Alpha	Shift+Alpha
	HEX	Key	Switch 0	Switch 1	Switch 2	Switch 1+2
KEY 75	0x4B	**1**	1	Shift 1	m	M
KEY 77	0x4D	**9**	9	Shift 9	e	E
KEY 78	0x4E	**F5**	F5	F10	s	S
KEY 82	0x52	**F18**	F18	Shift F18		~~(37)~~
KEY 84	0x54	**F10**	F10	Shift F10		
KEY 87	0x57	**F2**	F2	Shift F2		
KEY 88	0x58	**Ctrl**	Ctrl	Ctrl	Ctrl	Ctrl
KEY 91	0x5B	**6**	6	Shift 6	j	J
KEY 93	0x5D	**ESC**	ESC	\	b	B
KEY 94	0x5E	⇔	⇔	Shift ⇔	>	>
KEY 100	0x64	**F15**	F15	Shift F15		~~(1F)!~~
KEY 103	0x67	**F7**	F7	Shift F7		
KEY 104	0x68	**.**	.	DEL	y	Y
KEY 107	0x6B	**3**	3	Shift 3	o	O
KEY 109	0x6D	**:**	:	Space	g	G
KEY 110	0x6E	↑	↑	⇑ Bild	u	U
KEY 116	0x74	**F16**	F16	Shift F16		~~(27)!~~
KEY 119	0x77	**F8**	F8	Shift F8		
KEY 120	0x78	**Enter**	Return	?	z	Z
KEY 123	0x7B	**F4**	F4	F9	p	P
KEY 125	0x7D	**4**	4	Shift 4	h	H
KEY 126	0x7E	←	←	Home	v	V

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PIPANEL IFT, German settings

Pilz Key KEY No.	GR IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	+	+	=	@	#
KEY 3	0x03	-	-	_	ü	Ü
KEY 4	0x04	*	*	?	ö	Ö
KEY 5	0x05	:	:	/	ä	Ä
KEY 7	0x07	Z	z	Z		
KEY 8	0x08	U	u	U		
KEY 9	0x09	P	p	P		
KEY 10	0x0A	K	k	K		
KEY 11	0x0B	E	e	E		
KEY 18	0x12	3	3	§		
KEY 19	0x13	6	6	&		
KEY 20	0x14	9	9	)		
KEY 21	0x15	⇐	⇐	;	,	ß
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	Y	y	Y		
KEY 24	0x18	T	t	T		
KEY 25	0x19	O	o	O		
KEY 26	0x1A	I/J	i	I	j	J
KEY 27	0x1B	D	d	D		
KEY 34	0x22	2	2	"		
KEY 35	0x23	5	5	%		
KEY 36	0x24	8	8	(		
KEY 37	0x25	\	DEL	Shift DEL	Ctrl DEL	DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	X	x	X		
KEY 40	0x28	S	s	S		
KEY 41	0x29	N	n	N		
KEY 42	0x2A	H	h	H		
KEY 43	0x2B	C	c	C		
KEY 50	0x32	1	1	!		

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Appendix

Pilz Key KEY No.	GR IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	/		
KEY 53	0x35	⇔	⇔	Shift ⇔		
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild ⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	=		
KEY 67	0x43	**Space**	Space	Shift	I	~
KEY 68	0x44	**Shift**				
KEY 69	0x45	**ESC**	ESC	ESC	ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	

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Pilz Key KEY No.	GR IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**				
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**Enter**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

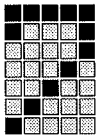
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Appendix

PIPANEL IFT, French settings

Pilz Key KEY No.	FR IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	**+**	+	=	@	#
KEY 3	0x03	**-**	-	_	Ù	Ù
KEY 4	0x04	*****	*	?	à	ç
KEY 5	0x05	**:**	:	/	é	è
KEY 7	0x07	**Z**	z	Z		
KEY 8	0x08	**U**	u	U		
KEY 9	0x09	**P**	p	P		
KEY 1	0x0A	**K**	k	K		
KEY 11	0x0B	**E**	e	E		
KEY 18	0x12	**3**	3	"		
KEY 19	0x13	**6**	6	-		
KEY 20	0x14	**9**	9	ç		
KEY 21	0x15	⇐	⇐	;	,	£
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	**Y**	y	Y		
KEY 24	0x18	**T**	t	T		
KEY 25	0x19	**O**	o	O		
KEY 26	0x1A	**I/J**	i	I	j	J
KEY 27	0x1B	**D**	d	D		
KEY 34	0x22	**2**	2	é		
KEY 35	0x23	**5**	5	(		
KEY 36	0x24	**8**	8	_		
KEY 37	0x25	****	\	DEL	Strg DEL	DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	**X**	x	X		
KEY 40	0x28	**S**	s	S		
KEY 41	0x29	**N**	n	N		
KEY 42	0x2A	**H**	h	H		
KEY 43	0x2B	**C**	c	C		
KEY 50	0x32	**1**	1	&		

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Pilz Key KEY No.	FR IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	,		
KEY 52	0x34	**7**	7	è		
KEY 53	0x35	↔	↔	Shift ↔		
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild ⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	à		
KEY 67	0x43	**Space**	Space	Shift	|	~
KEY 68	0x44	**Shift**				
KEY 69	0x45	**ESC**	ESC	ESC	ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT

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Appendix

Pilz Key KEY No.	FR IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**				
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**ENTER**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

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PIPANEL IFT, Italian settings

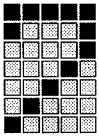
Pilz Key KEY No.	IT IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	+	+	=	@	#
KEY 3	0x03	-	-	_	è	é
KEY 4	0x04	*	*	?	ò	ç
KEY 5	0x05	:	:	/	à	ù
KEY 7	0x07	Z	z	Z		
KEY 8	0x08	U	u	U		
KEY 9	0x09	P	p	P		
KEY 1	0x0A	K	k	K		
KEY 11	0x0B	E	e	E		
KEY 18	0x12	3	3	£		
KEY 19	0x13	6	6	&		
KEY 20	0x14	9	9	)		
KEY 21	0x15	⇐	⇐	;	,	°
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	Y	y	Y		
KEY 24	0x18	T	t	T		
KEY 25	0x19	O	o	O		
KEY 26	0x1A	I/J	i	I	j	J
KEY 27	0x1B	D	d	D		
KEY 34	0x22	2	2	„		
KEY 35	0x23	5	5	%		
KEY 36	0x24	8	8	(		
KEY 37	0x25	\	\	DEL	Strg DEL	DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	X	x	X		
KEY 40	0x28	S	s	S		
KEY 41	0x29	N	n	N		
KEY 42	0x2A	H	h	H		
KEY 43	0x2B	C	c	C		
KEY 50	0x32	1	1	!		

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Appendix

Pilz Key KEY No.	IT IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	/		
KEY 53	0x35	**↔**	↔	Shift ↔		
KEY 54	0x36	**↑**	↑	Shift ↑	Bild ⇑	Shift Bild⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	=		
KEY 67	0x43	**Space**	Space	Shift	I	Ù
KEY 68	0x44	**Shift**				
KEY 69	0x45	**ESC**	ESC	ESC	ESC	ESC
KEY 70	0x46	**←**	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT

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Pilz Key KEY No.	IT IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**				
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**ENTER**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

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Appendix

PIPANEL IFT, Spanish settings

Pilz Key KEY No.	SP IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	**+**	+	=	@	#
KEY 3	0x03	**-**	-	_	ñ	Ñ
KEY 4	0x04	*****	*	?	¡	Ç
KEY 5	0x05	**:**	:	/	º	ª
KEY 7	0x07	**Z**	z	Z		
KEY 8	0x08	**U**	u	U		
KEY 9	0x09	**P**	p	P		
KEY 1	0x0A	**K**	k	K		
KEY 11	0x0B	**E**	e	E		
KEY 18	0x12	**3**	3	·		
KEY 19	0x13	**6**	6	&		
KEY 20	0x14	**9**	9	)		
KEY 21	0x15	⇐	⇐	;	,	¿
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	**Y**	y	Y		
KEY 24	0x18	**T**	t	T		
KEY 25	0x19	**O**	o	O		
KEY 26	0x1A	**I/J**	i	I	j	J
KEY 27	0x1B	**D**	d	D		
KEY 34	0x22	**2**	2	„		
KEY 35	0x23	**5**	5	%		
KEY 36	0x24	**8**	8	(		
KEY 37	0x25	****	\	DEL	Strg DEL	Shift DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	**X**	x	X		
KEY 40	0x28	**S**	s	S		
KEY 41	0x29	**N**	n	N		
KEY 42	0x2A	**H**	h	H		
KEY 43	0x2B	**C**	c	C		
KEY 50	0x32	**1**	1	!		

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Pilz Key KEY No.	SP IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	/		
KEY 53	0x35	↔	↔	Shift ↔		
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	=		
KEY 67	0x43	**Space**	Space	Shift	|	¬
KEY 68	0x44	**Shift**				
KEY 69	0x45	**ESC**	ESC	ESC	ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT

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Appendix

Pilz Key KEY No.	SP IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**				
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**ENTER**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

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PIPANEL IFT, British-English settings

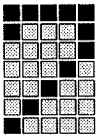
Pilz Key KEY No.	UK IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	+	+	=	@	#
KEY 3	0x03	-	-	_	‘	¬
KEY 4	0x04	*	*	?	[	{
KEY 5	0x05	:	:	/	]	}
KEY 7	0x07	Z	z	Z		
KEY 8	0x08	U	u	U		
KEY 9	0x09	P	p	P		
KEY 10	0x0A	K	k	K		
KEY 11	0x0B	E	e	E		
KEY 18	0x12	3	3	£		
KEY 19	0x13	6	6	^		
KEY 20	0x14	9	9	(		
KEY 21	0x15	⇐	⇐	;	,	’
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	Y	y	Y		
KEY 24	0x18	T	t	T		
KEY 25	0x19	O	o	O		
KEY 26	0x1A	I/J	i	I	j	J
KEY 27	0x1B	D	d	D		
KEY 34	0x22	2	2	„		
KEY 35	0x23	5	5	%		
KEY 36	0x24	8	8	*		
KEY 37	0x25	\	DEL	Shift DEL	Ctrl DEL	DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	X	x	X		
KEY 40	0x28	S	s	S		
KEY 41	0x29	N	n	N		
KEY 42	0x2A	H	h	H		
KEY 43	0x2B	C	c	C		
KEY 50	0x32	1	1	!		

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Appendix

Pilz Key KEY No.	UK IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	&		
KEY 53	0x35	⇔	⇔	Shift ⇔		
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild ⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	)		
KEY 67	0x43	**Space**	Space	Shift	|	~
KEY 68	0x44	**Shift**				
KEY 69	0x45	**ESC**	ESC	ESC	ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT

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Pilz Key KEY No.	UK IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**				
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**Enter**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

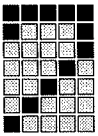
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Appendix

PIPANEL IFT, American-English settings

Pilz Key KEY No.	US IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	**+**	+	=	@	#
KEY 3	0x03	**-**	-	_	‘	”
KEY 4	0x04	*****	*	?	[	{
KEY 5	0x05	**:**	:	/	]	}
KEY 7	0x07	**Z**	z	Z		
KEY 8	0x08	**U**	u	U		
KEY 9	0x09	**P**	p	P		
KEY 10	0x0A	**K**	k	K		
KEY 11	0x0B	**E**	e	E		
KEY 18	0x12	**3**	3	#		
KEY 19	0x13	**6**	6	^		
KEY 20	0x14	**9**	9	(		
KEY 21	0x15	⇐	⇐	;	,	’
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	**Y**	y	Y		
KEY 24	0x18	**T**	t	T		
KEY 25	0x19	**O**	o	O		
KEY 26	0x1A	**I/J**	i	I	j	J
KEY 27	0x1B	**D**	d	D		
KEY 34	0x22	**2**	2	@		
KEY 35	0x23	**5**	5	%		
KEY 36	0x24	**8**	8	*		
KEY 37	0x25	****	DEL	Shift DEL	Ctrl DEL	DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	**X**	x	X		
KEY 40	0x28	**S**	s	S		
KEY 41	0x29	**N**	n	N		
KEY 42	0x2A	**H**	h	H		
KEY 43	0x2B	**C**	c	C		
KEY 50	0x32	**1**	1	!		

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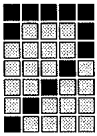
Pilz Key KEY No.	US IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	&		
KEY 53	0x35	⇔	⇔	Shift ⇔		
KEY 54	0x36	-	-	Shift -	Bild Ý	Shift Bild Ý
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	)		
KEY 67	0x43	**Space**	Space	Shift	I	~
KEY 68	0x44	**Shift**				
KEY 69	0x45	**ESC**	ESC	ESC	ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	

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Appendix

Pilz Key KEY No.	US IFT HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**				
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**Enter**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

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PIPANEL MFII, German settings

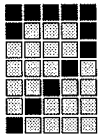
Pilz Key KEY No.	GR MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	**+**	+	=	@	#
KEY 3	0x03	**-**	-	_	ü	Ü
KEY 4	0x04	*****	*	?	ö	Ö
KEY 5	0x05	**:**	:	/	ä	Ä
KEY 7	0x07	**Z**	z	Z		
KEY 8	0x08	**U**	u	U		
KEY 9	0x09	**P**	p	P		
KEY 10	0x0A	**K**	k	K		
KEY 11	0x0B	**E**	e	E		
KEY 18	0x12	**3**	3	§		
KEY 19	0x13	**6**	6	&		
KEY 20	0x14	**9**	9	)		
KEY 21	0x15	⇐	⇐	;	,	ß
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	**Y**	y	Y		
KEY 24	0x18	**T**	t	T		
KEY 25	0x19	**O**	o	O		
KEY 26	0x1A	**I/J**	i	I	j	J
KEY 27	0x1B	**D**	d	D		
KEY 34	0x22	**2**	2	„		
KEY 35	0x23	**5**	5	%		
KEY 36	0x24	**8**	8	(		
KEY 37	0x25	****	\	DEL	Ctrl/DEL	Shift /DEL
KEY 38	0x26	¯	¯	Shift ¯	Bild ß	Shift Bild ß
KEY 39	0x27	**X**	x	X		
KEY 40	0x28	**S**	s	S		
KEY 41	0x29	**N**	n	N		
KEY 42	0x2A	**H**	h	H		
KEY 43	0x2B	**C**	c	C		
KEY 50	0x32	**1**	1	!		

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Appendix

Pilz Key KEY No.	GR MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	/		
KEY 53	0x35	⇔	⇔	Shift ⇔	Ctrl ⇔	
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild ⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	=		
KEY 67	0x43	**Space**	Space	Shift/Space		~
KEY 68	0x44	**Shift**	Shift		Shift/Crtl	
KEY 69	0x45	**ESC**	ESC	ESC	Ctrl ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT

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Pilz Key KEY No.	GR MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**	Ctrl	Ctrl/Shift		
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**Enter**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

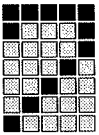
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Appendix

PIPANEL MFII, French settings

Pilz Key KEY No.	FR MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	+	+	=	@	#
KEY 3	0x03	-	-	_	ù	ù
KEY 4	0x04	*	*	?	à	ç
KEY 5	0x05	:	:	/	é	è
KEY 7	0x07	Z	z	Z		
KEY 8	0x08	U	u	U		
KEY 9	0x09	P	p	P		
KEY 1	0x0A	K	k	K		
KEY 11	0x0B	E	e	E		
KEY 18	0x12	3	3	„		
KEY 19	0x13	6	6	)		
KEY 20	0x14	9	9	ç		
KEY 21	0x15	⇐	⇐	;	,	£
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	Y	y	Y		
KEY 24	0x18	T	t	T		
KEY 25	0x19	O	o	O		
KEY 26	0x1A	I/J	i	I	j	J
KEY 27	0x1B	D	d	D		
KEY 34	0x22	2	2	é		
KEY 35	0x23	5	5	(		
KEY 36	0x24	8	8	_		
KEY 37	0x25	\	\	DEL	Ctrl/DEL	Shift/DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	X	x	X		
KEY 40	0x28	S	s	S		
KEY 41	0x29	N	n	N		
KEY 42	0x2A	H	h	H		
KEY 43	0x2B	C	c	C		
KEY 50	0x32	1	1	&		

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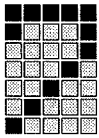
Pilz Key KEY No.	FR MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	‘		
KEY 52	0x34	**7**	7	è		
KEY 53	0x35	**↔**	↔	Shift ↔	Ctrl ⇔	
KEY 54	0x36	**↑**	↑	Shift ↑	Bild ⇑	Shift Bild ⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	à		
KEY 67	0x43	**Space**	Space	Shift/Space		~
KEY 68	0x44	**Shift**	Shift		Shift/Ctlr	
KEY 69	0x45	**ESC**	ESC	ESC	Ctrl ESC	ESC
KEY 70	0x46	**←**	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	

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Appendix

Pilz Key KEY No.	FR MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**	Ctrl		Ctrl/Shift	
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**ENTER**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

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PIPANEL MFII, Italian settings

Pilz Key KEY No.	IT MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	**+**	+	=	@	#
KEY 3	0x03	**-**	-	_	è	é
KEY 4	0x04	*	*	?	ò	ç
KEY 5	0x05	**:**	:	/	à	ù
KEY 7	0x07	**Z**	z	Z		
KEY 8	0x08	**U**	u	U		
KEY 9	0x09	**P**	p	P		
KEY 1	0x0A	**K**	k	K		
KEY 11	0x0B	**E**	e	E		
KEY 18	0x12	**3**	3	£		
KEY 19	0x13	**6**	6	&		
KEY 20	0x14	**9**	9	)		
KEY 21	0x15	⇐	⇐	;	,	°
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	**Y**	y	Y		
KEY 24	0x18	**T**	t	T		
KEY 25	0x19	**O**	o	O		
KEY 26	0x1A	**I/J**	i	I	j	J
KEY 27	0x1B	**D**	d	D		
KEY 34	0x22	**2**	2	„		
KEY 35	0x23	**5**	5	%		
KEY 36	0x24	**8**	8	(		
KEY 37	0x25	****	\	DEL	Ctrl/DEL	Shift/DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	**X**	x	X		
KEY 40	0x28	**S**	s	S		
KEY 41	0x29	**N**	n	N		
KEY 42	0x2A	**H**	h	H		
KEY 43	0x2B	**C**	c	C		
KEY 50	0x32	**1**	1	!		

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Appendix

Pilz Key KEY No.	IT MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	/		
KEY 53	0x35	⇔	⇔	Shift ⇔	Ctrl ⇔	
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	=		
KEY 67	0x43	**Space**	Space	Shift/Space	|	^
KEY 68	0x44	**Shift**	Shift		Shift/Ctlr	
KEY 69	0x45	**ESC**	ESC	ESC	Ctrl ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	

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Pilz Key KEY No.	IT MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**	Ctrl	Ctrl/Shift		
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**ENTER**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

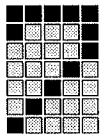
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Appendix

PIPANEL MFII, Spanish settings

Pilz Key KEY No.	SP MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	+	+	=	@	#
KEY 3	0x03	-	-	_	ñ	Ñ
KEY 4	0x04	*	*	?	¡	Ç
KEY 5	0x05	:	:	/	º	ª
KEY 7	0x07	Z	z	Z		
KEY 8	0x08	U	u	U		
KEY 9	0x09	P	p	P		
KEY 1	0x0A	K	k	K		
KEY 11	0x0B	E	e	E		
KEY 18	0x12	3	3	•		
KEY 19	0x13	6	6	&		
KEY 20	0x14	9	9	)		
KEY 21	0x15	⇐	⇐	;	,	¿
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	Y	y	Y		
KEY 24	0x18	T	t	T		
KEY 25	0x19	O	o	O		
KEY 26	0x1A	I/J	i	I	j	J
KEY 27	0x1B	D	d	D		
KEY 34	0x22	2	2	„		
KEY 35	0x23	5	5	%		
KEY 36	0x24	8	8	(		
KEY 37	0x25	\	\	DEL	Ctrl/DEL	Shift/ DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	X	x	X		
KEY 40	0x28	S	s	S		
KEY 41	0x29	N	n	N		
KEY 42	0x2A	H	h	H		
KEY 43	0x2B	C	c	C		
KEY 50	0x32	1	1	!		

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Pilz Key KEY No.	SP MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	/		
KEY 53	0x35	⇔	⇔	Shift ⇔	Ctrl ⇔	
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	=		
KEY 67	0x43	**Space**	Space	Shift/Space		¬
KEY 68	0x44	**Shift**	Shift		Shift/Ctrl	
KEY 69	0x45	**ESC**	ESC	ESC	Ctrl ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT

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Appendix

Pilz Key KEY No.	SP MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**	Ctrl	Ctrl/Shift		
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**ENTER**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

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PIPANEL MFII, British-English settings

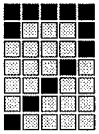
Pilz Key KEY No.	UK MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	+	+	=	@	#
KEY 3	0x03	-	-	_	‘	¬
KEY 4	0x04	*	*	?	[	{
KEY 5	0x05	:	:	/	]	}
KEY 7	0x07	Z	z	Z		
KEY 8	0x08	U	u	U		
KEY 9	0x09	P	p	P		
KEY 10	0x0A	K	k	K		
KEY 11	0x0B	E	e	E		
KEY 18	0x12	3	3	£		
KEY 19	0x13	6	6	^		
KEY 20	0x14	9	9	(		
KEY 21	0x15	⇐	⇐	;	,	’
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	Y	y	Y		
KEY 24	0x18	T	t	T		
KEY 25	0x19	O	o	O		
KEY 26	0x1A	I/J	i	I	j	J
KEY 27	0x1B	D	d	D		
KEY 34	0x22	2	2	„		
KEY 35	0x23	5	5	%		
KEY 36	0x24	8	8	*		
KEY 37	0x25	\	\	DEL	Ctrl/DEL	Shift/DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	X	x	X		
KEY 40	0x28	S	s	S		
KEY 41	0x29	N	n	N		
KEY 42	0x2A	H	h	H		
KEY 43	0x2B	C	c	C		
KEY 50	0x32	1	1	!		

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Appendix

Pilz Key KEY No.	UK MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	&		
KEY 53	0x35	⇔	⇔	Shift ⇔	Ctrl ⇔	
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild ⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	)		
KEY 67	0x43	**Space**	Space	Shift/Space	|	~
KEY 68	0x44	**Shift**	Shift		Shift/Ctrl	
KEY 69	0x45	**ESC**	ESC	ESC	Ctrl ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT

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Pilz Key KEY No.	UK MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**	Ctrl	Ctrl/Shift		
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**Enter**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

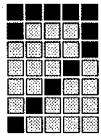
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Appendix

PIPANEL MFII, American-English settings

Pilz Key KEY No.	US MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	**+**	+	=	@	#
KEY 3	0x03	**-**	-	_	‘	”
KEY 4	0x04	*****	*	?	[	{
KEY 5	0x05	**:**	:	/	]	}
KEY 7	0x07	**Z**	z	Z		
KEY 8	0x08	**U**	u	U		
KEY 9	0x09	**P**	p	P		
KEY 10	0x0A	**K**	k	K		
KEY 11	0x0B	**E**	e	E		
KEY 18	0x12	**3**	3	#		
KEY 19	0x13	**6**	6	^		
KEY 20	0x14	**9**	9	(		
KEY 21	0x15	⇐	⇐	;	,	’
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	**Y**	y	Y		
KEY 24	0x18	**T**	t	T		
KEY 25	0x19	**O**	o	O		
KEY 26	0x1A	**I/J**	i	I	j	J
KEY 27	0x1B	**D**	d	D		
KEY 34	0x22	**2**	2	@		
KEY 35	0x23	**5**	5	%		
KEY 36	0x24	**8**	8	*		
KEY 37	0x25	****	\	DEL	Ctrl/DEL	Shift/DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	**X**	x	X		
KEY 40	0x28	**S**	s	S		
KEY 41	0x29	**N**	n	N		
KEY 42	0x2A	**H**	h	H		
KEY 43	0x2B	**C**	c	C		
KEY 50	0x32	**1**	1	!		

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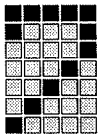
Pilz Key KEY No.	US MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$		
KEY 52	0x34	**7**	7	&		
KEY 53	0x35	⇔	⇔	Shift ⇔	Ctrl ⇔	
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild ⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M		
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	)		
KEY 67	0x43	**Space**	Space	Shift/Space		~
KEY 68	0x44	**Shift**	Shift		Shift/Ctrl	
KEY 69	0x45	**ESC**	ESC	ESC	Ctrl/ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A		
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	

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Appendix

Pilz Key KEY No.	US MFII HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**	Ctrl	Ctrl/Shift		
KEY 114	0x72	**.**	.	>	<	%
KEY 115	0x73	**Enter**	↵	Shift/↵	Ctrl/↵	Shift/Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

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PIPANEL Special, German settings

Pilz Key KEY No.	GR MFII Special HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 2	0x02	**+**	+	=	@	#
KEY 3	0x03	**-**	-	_	ü	Ü
KEY 4	0x04	*****	*	?	ö	Ö
KEY 5	0x05	**:**	/	:	ä	Ä
KEY 7	0x07	**Z**	z	Z		
KEY 8	0x08	**U**	u	U	ü	Ü
KEY 9	0x09	**P**	p	P		
KEY 10	0x0A	**K**	k	K		
KEY 11	0x0B	**E**	e	E		
KEY 18	0x12	**3**	3	§	.	
KEY 19	0x13	**6**	6	&	&	
KEY 20	0x14	**9**	9	)	)	
KEY 21	0x15	⇐	⇐	;	,	ß
KEY 22	0x16	→	→	Shift →	- (Num)	END
KEY 23	0x17	**Y**	y	Y		
KEY 24	0x18	**T**	t	T		
KEY 25	0x19	**O**	o	O	ö	Ö
KEY 26	0x1A	**I/J**	i	I	j	J
KEY 27	0x1B	**D**	d	D		
KEY 34	0x22	**2**	2	"	?	
KEY 35	0x23	**5**	5	%	%	
KEY 36	0x24	**8**	8	(	(	
KEY 37	0x25	****	DEL	Shift DEL	Ctrl DEL	DEL
KEY 38	0x26	↓	↓	Shift ↓	Bild ⇓	Shift Bild ⇓
KEY 39	0x27	**X**	x	X		
KEY 40	0x28	**S**	s	S	ß	ß
KEY 41	0x29	**N**	n	N		
KEY 42	0x2A	**H**	h	H		
KEY 43	0x2B	**C**	c	C		
KEY 50	0x32	**1**	1	!	!	

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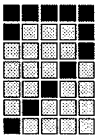
Appendix

Pilz Key KEY No.	GR MFII Special HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 51	0x33	**4**	4	$	<	
KEY 52	0x34	**7**	7	/	>	
KEY 53	0x35	⇔	⇔	Shift ⇔		
KEY 54	0x36	↑	↑	Shift ↑	Bild ⇑	Shift Bild ⇑
KEY 55	0x37	**W**	w	W		
KEY 56	0x38	**R**	r	R		
KEY 57	0x39	**M**	m	M	µ	µ
KEY 58	0x3A	**G**	g	G		
KEY 59	0x3B	**B**	b	B		
KEY 66	0x42	**0**	0	=	,	
KEY 67	0x43	**Space**	Space	Shift/Space	l	~
KEY 68	0x44	**Shift**	Shift		Shift/Crtl	
KEY 69	0x45	**ESC**	ESC	ESC	ESC	ESC
KEY 70	0x46	←	←	Shift ←	+ (Num)	Home
KEY 71	0x47	**V**	v	V		
KEY 72	0x48	**Q**	q	Q		
KEY 73	0x49	**L**	l	L		
KEY 74	0x4A	**F**	f	F		
KEY 75	0x4B	**A**	a	A	ä	Ä
KEY 82	0x52	**F10**	F10	Shift F10	Ctrl F10	
KEY 83	0x53	**F9**	F9	Shift F9	Ctrl F9	
KEY 84	0x54	**F8**	F8	Shift F8	Ctrl F8	
KEY 85	0x55	**F7**	F7	Shift F7	Ctrl F7	
KEY 86	0x56	**F6**	F6	Shift F6	Ctrl F6	
KEY 87	0x57	**F5**	F5	Shift F5	Ctrl F5	
KEY 88	0x58	**F4**	F4	Shift F4	Ctrl F4	
KEY 89	0x59	**F3**	F3	Shift F3	Ctrl F3	
KEY 90	0x5A	**F2**	F2	Shift F2	Ctrl F2	
KEY 91	0x5B	**F1**	F1	Shift F1	Ctrl F1	
KEY 96	0x60	**ALT**	ALT	ALT	ALT	ALT
KEY 98	0x62	**F12**	F12	Shift F12	Ctrl F12	
KEY 99	0x63	**F11**	F11	Shift F11	Ctrl F11	

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Pilz Key KEY No.	GR MFII Special HEX	Pipanel Key	Select key None Switch 0	Shift Switch 1	Ctrl Switch 2	Shift+Ctrl Switch 1+2
KEY 100	0x64	**S16**	Ctrl F8			
KEY 101	0x65	**S15**	Ctrl F7			
KEY 102	0x66	**S14**	Ctrl F6			
KEY 103	0x67	**S13**	Ctrl F5			
KEY 104	0x68	**S12**	Ctrl F4			
KEY 105	0x69	**S11**	Ctrl F3			
KEY 106	0x6A	**S10**	Ctrl F2			
KEY 107	0x6B	**S9**	Ctrl F1			
KEY 113	0x71	**Ctrl**	Ctrl	Ctrl/Shift		
KEY 114	0x72	**.**	.	>	:	%
KEY 115	0x73	**Enter**	↵	Shift/↵	=	Ctrl/↵
KEY 116	0x74	**S8**	Shift F8			
KEY 117	0x75	**S7**	Shift F7			
KEY 118	0x76	**S6**	Shift F6			
KEY 119	0x77	**S5**	Shift F5			
KEY 120	0x78	**S4**	Shift F4			
KEY 121	0x79	**S3**	Shift F3			
KEY 122	0x7A	**S2**	Shift F2			
KEY 123	0x7B	**S1**	Shift F1			

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Notizen

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A

Pilz Ges.m.b.H.
Modecenterstraße 14
1030 Wien
Austria
Telephone (01) 7 98 62 63-0
Telefax (01) 7 98 62 64
E-Mail: pilz@eunet.at

AUS

Pilz Australia
Industrial Automation LLP.
9/475 Blackburn Road
Mt. Waverley, Melbourne VIC 3149
Australia
Telephone (03) 95 44 63 00
Telefax (03) 95 44 63 11
E-Mail: safety@pilz.com.au

B
L

Pilz Belgium
BC Building
Industriezone III
Industrielaan 4
9320 Erembodegem
Belgium
Telephone (0 53) 83 66 70
Telefax (0 53) 83 89 58
E-Mail: info@pilz.be

BR

Pilz do Brasil Sistemas Eletrônicos Industriais Ltda.
Rua Ártico, 123 - Jd. do Mar
09726-300
São Bernardo do Campo - SP
Brazil
Telephone (11) 43 37-12 41
Telefax (11) 43 37-12 42
E-Mail: pilz@pilzbr.com.br

CH

Pilz Industrieelektronik GmbH
Gewerbepark Hintermättli
Postfach 6
5506 Mägenwil
Switzerland
Telephone (0 62) 8 89 79 30
Telefax (0 62) 8 89 79 40
E-Mail: pilz@bluewin.ch

D

Headquarters:
Pilz GmbH & Co.
Felix-Wankel-Straße 2
73760 Ostfildern
Germany
Telephone (07 11) 34 09-0
Telefax (07 11) 34 09-1 33
E-Mail: pilz.gmbh@pilz.de

DK

Pilz Skandinavien KS
Ellegaardvej 25 L
6400 Sonderborg
Denmark
Telephone 74 43 63 32
Telefax 74 43 63 42
E-Mail: pilz@pilz.dk

E

Pilz Industrieelektronik S.L.
Edificio Tilma
Avda. Sant Julià 1
08400 Granollers
Spain
Telephone (93) 8 49 74 33
Telefax (93) 8 49 75 44
E-Mail: pilz@camerdata.es

F

Pilz France Electronic
1, rue Jacob Mayer
BP 12
67037 Strasbourg Cedex
France
Telephone 03 88 10 40 00
Telefax 03 88 10 80 00
E-Mail: siege@pilz-france.fr

FIN

Pilz Skandinavien KS
Pakilantie 61
00660 Helsinki
Finland
Telephone (09) 27 09 37 00
Telefax (09) 27 09 37 09
E-Mail: pilz.sk@kolumbus.fi

GB

Pilz Automation Technology
Willow House
Medlicott Close
Oakley Hay Business Park
Corby
Northants NN18 9NF
United Kingdom
Telephone (0 15 36) 46 07 66
Telefax (0 15 36) 46 08 66
E-Mail: sales@pilz.co.uk

I

Pilz Italia srl
Via Meda 2/A
22060 Novedrate (CO)
Italy
Telephone (0 31) 78 95 11
Telefax (0 31) 78 95 55
E-Mail: pilzitalia@tin.it

IRL

Pilz Ireland Industrial Automation
11 Emmet Place
Cork
Ireland
Telephone (0 21) 27 48 83
Telefax (0 21) 27 48 94
E-Mail: sales@pilz.ie

J

Pilz Japan Co., Ltd.
Three One Building 701
3-20-5 Shin-Yokohama
Kohoku-ku
Yokohama 222-0033
Japan
Telephone (0 45) 471-22 81
Telefax (0 45) 471-22 83
E-Mail: pilz@pilz.co.jp

WWW

www.pilz.com

MEX

Pilz de Mexico S. de R.L. de C.V.
Av. San Ignacio 1079
Col. Jardines de San Ignacio
C.P. 45000
Guadalajara, Jalisco
Mexico
Telephone (0 13) 1 22 16 81
Telefax (0 13) 6 47 81 85
E-Mail: pilz_msolis@infosel.net

NL

Pilz Nederland
Postbus 186
4130 ED Vianen
Netherlands
Telephone (03 47) 32 04 77
Telefax (03 47) 32 04 85
E-Mail: info@pilz.nl

P

Pilz Industrieelektronik S.L.
Apartado 2028
2706-909 Colares
Portugal
Telephone (01) 9 28 91 09
Telefax (01) 9 28 91 13
E-Mail: pilz@esoterica.pt

PRC

Pilz China Representative Office
Flat F9/F Huijing Building
134 Siyou Xin Malu
Dongshan District
Guangzhou 510600
China
Telephone (0 20) 87 37 16 18
Telefax (0 20) 87 37 35 55
E-Mail: pilzchn@public.guangzhou.g

S

Pilz Skandinavien KS
Energigatan 10 B
43437 Kungsbacka
Sweden
Telephone (03 00) 1 39 90
Telefax (03 00) 3 07 40
E-Mail: pilz@tripnet.se

SGP

Pilz Industrial Automation Pte Ltd.
61, Kaki Bukit Ave 1, #05-01
Shun Li Industrial Park
Singapore 417943
Singapore
Telephone 8 44 44 40
Telefax 8 44 44 41
E-Mail: pilzsg.com@pacific.ne

USA

Pilz LP
24850 Drake Road
Farmington Hills
Michigan 48335
USA
Telephone (2 48) 4 73-11 33
Telefax (2 48) 4 73-39 97
E-Mail: info@pilzusa.com

pilz

Pilz GmbH & Co.
Felix-Wankel-Straße 2, 73760 Ostfildern, Germany
Telephone +49 (7 11) 34 09-0, Telefax +49 (7 11) 34 09-1 33

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Ergänzung Bedienungsanleitung PIPANEL Tastatur Sach-Nr. 19 593

Die Systemfamilie PIPANEL wird ab sofort mit neuem Tastencode geliefert. Der Tastencode ist von der im PIPANEL-Gerät voreingestellten Landessprache abhängig (siehe Tabelle).

Beim Booten eines jeden Rechnersystems ist durch das integrierte Tastatur-EPROM eine bestimmte Landessprache voreingestellt.
Um die voreingestellte Landessprache an die im Betriebssystem eingestellte Landessprache anpassen zu können, bietet Pilz das Dienstprogramm IK.EXE an (lauffähig unter den Betriebssystemen DOS, DOS unter Windows 3.11 und DOS unter Windows 95).
Das Dienstprogramm IK.EXE ist im Lieferumfang des Rechners enthalten. Seine Anwendung wird in der Bedienungsanleitung des Rechners erklärt.

Beim Einsatz des Betriebssystems Windows NT kann IK.EXE nicht genutzt werden. Hier ist es notwendig, schon bei der Bestellung des Rechners das gewünschte Tastatur-EPROM anzugeben. Pilz bietet Tastatur-EPROMs für die Sprachen Englisch (UK) und Deutsch (GR) an.

PIPANEL-Tastatur	Landessprache Englisch (UK)	Landessprache Deutsch (GR)
Shift + \	DEL	DEL
Shift + :	/	<
Ctrl + :		ä
Shift + x	?	?
Ctrl + x		ö
Shift + -	_	_
Ctrl + -		ü
Shift + +	=	#
Ctrl + +	@	
Shift + .	>	>
Shift + ↑	Shift + ↑	Shift + ↑
Ctrl + ↑	Bild ↑	Bild ↑
Shift + ↓	Shift + ↓	Shift + ↓
Ctrl + ↓	Bild ↓	Bild ↓
Shift + ←	Shift + ←	Shift + ←
Ctrl + ←	+	+

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PIPANEL-Tastatur	Landessprache Englisch (UK)	Landessprache Deutsch (GR)
Shift + →	Shift + →	Shift + →
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Shift + 0	)	=
Shift + 1	!	!
Shift + 2	"	"
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S1	Shift + F1	Shift + F1
S2	Shift + F2	Shift + F2
S3	Shift + F3	Shift + F3
S4	Shift + F4	Shift + F4
S5	Shift + F5	Shift + F5
S6	Shift + F6	Shift + F6
S7	Shift + F7	Shift + F7
S8	Shift + F8	Shift + F8
S9	Ctrl + F1	Ctrl + F1
S10	Ctrl + F2	Ctrl + F2
S11	Ctrl + F3	Ctrl + F3
S12	Ctrl + F4	Ctrl + F4
S13	Ctrl + F5	Ctrl + F5
S14	Ctrl + F6	Ctrl + F6
S15	Ctrl + F7	Ctrl + F7
S16	Ctrl + F8	Ctrl + F8

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Stammhaus/Headquarter/Maison mère: Pilz GmbH & Co., Felix-Wankel-Straße 2, 73760 Ostfildern, ✆ (07 11) 34 09-0, Fax (07 11) 34 09-1 33, E-Mail: pilz.gmbh@pilz.de

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Ergänzung Rechnereinbau/Tastatur
Sach-Nr. 18 693

Einbau

Beachten Sie beim Einbau des Rechners in einen Schaltschrank (Gehäuse):

- Die max. zulässige Umgebungstemperatur des Rechners unbedingt einhalten.
- Für ausreichende Belüftung sorgen:
  - Lufteintrittsöffnungen des Rechners frei halten, über die mit Ventilatoren Frischluft eingeblasen wird.
  - Filter sauber halten
  - ausreichend Abstand zwischen Rechner und Schaltschrank (Gehäuse) lassen
- Die Schrankinnentemperatur (Gehäuseinnentemperatur) kann deutlich höher als die Umgebungstemperatur z. B. Raumtemperatur sein. Die Temperaturdifferenz ist besonders groß, wenn der Schaltschrank (das Gehäuse)
  - klein ist
  - einen großen Wärmewiderstand hat
  - zusätzliche wärmeerzeugende Verbraucher enthält

  Um die zulässige Umgebungstemperatur des Rechners einzuhalten, können zusätzliche Maßnahmen notwendig sein wie:
  - Schaltschrankbelüftung/Gehäusebelüftung
  - Einbau eines Wärmetauschers
  - Wahl eines größeren Schaltschranks (Gehäuses)

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- Nur folgenden Tastaturstecker einsetzen:
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  Postfach 1152
  74148 Neckarsulm
  Andere Stecker können zu Kontaktproblemen führen. Ist Ihre Tastatur mit einem anderen Stecker bestückt, tauschen Sie ihn bitte aus.
- Wir empfehlen bei häufigem Einsatz der Tastatur die externen Pilz-Tastatur mit einer Schutzart von IP 65
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