



# TZA 4 / TZAKON

## Configuration program TZAKON

### Bedienungsanleitung

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## 1 Configuration program TZAKON

### 1.1 General description

The configuration program TZAKON enables configuration, parameterization and programming of the TZA 4 digital computing unit.

TZAKON may be run on an IBM-compatible PC (AT or PS-2). It is menu-led and simple to use. Communication between the TZA 4 and the PC is via the serial interface of the PC (COM1 or COM2).

For operation, the TZA 4 is loaded with a BASIC program. A number of standard, parameterizable programs are available for various tasks (see the overview sheet in the Operating Manual 42/18-40-EN). Alternatively, the user may write his own basic programs with the aid of TZAKON and load these into the TZA 4.

Upon loading, programs and parameter files are deposited in the RAM of the TZA 4. The program can be started, tested and then copied to the BASIC EPROM (EPROM 2) and saved (burnt in) there. A number of programs and parameter files may be saved in EPROM 2. One of these programs is then chosen and entered in an AUTO start list. This list indicates the program which automatically starts after restoration of power or following a hardware reset.

The main functions of the configuration program TZAKON are:

- Selection of a P program and a parameter file from a program or file library
- Generation or modification of program-specific parameter files
- Generation of programs by the user
- Loading and saving of programs and files in the EPROM 2 of the TZA 4
- Read-out of all programs and parameter files stored in the TZA 4
- Providing information on the status of TZAKON and the TZA 4, as well as initialization of TZAKON.

TZAKON has three different types of program:

#### a) P programs

eg., P421-V01.HEX

| Extension  
| Version No.  
| T~ Program No.

These programs are characterised as follows:

- They are standard list programs for various tasks (see also the overview sheet in the Operating Manual 42/18-40 EN)
- They are stored in the sub-directory TZAKON/PROGFILE
- They need program-specific parameter files (stored in the sub-directory TZAKON/DATFILE)
- They are grouped in program packages (max. 9 programs per package).

Each program package has a parameterization program, eg., P420-000.EXE. Parameterization programs are stored in the sub-directory TZAKON and enable the generation and validity checking of parameter files.

#### b) # programs

eg., # 005220 1. B52

| | | Extension  
| | Sequential No.  
| Date, eg., 22.05.90

These programs are characterised as follows:

- They are either standard list programs for various tasks or customer-specific programs.
- They are stored in the sub-directory TZAKON/1352DIR
- They are uniform in their structure (see example in Section 7.3)
- They do not need a parameter file
- The measurement and signal ranges have to be written in the program
- Scaling is carried out in the program
- They have the program name # xxx-yyy.B52 (where xxx resembles the number in the P program Pxxx-VOO.HEX and yyy = modification No.)
- They are saved under the file name # jmmtyy.B52. where
  - y = last digit of the year
  - mm = month

dd = day  
 zz = sequential number of the day  
 For example: 7 December 1992, fifth job - # 2120705.

**c) User programs**

eg., TESTPROG.1352  
           |          |\_\_\_\_\_ Extension  
           |\_\_\_\_\_ File names

- These programs are characterised as follows:
- They are BASIC 52 programs written by the users themselves (see Section 4)
- They are stored in the sub-directory TZAKON/1352DIR
- They do not have a uniform structure and, in contract to # programs, no caption data
- They do not require a parameter file
- They have an individual file name (max. 8 characters).

**1.2 Installing the configuration program TZAKON on a PC**

**1.2.1 PC requirements**

- IBM-compatible PC, AT, PS-2
- DOS version: DOS 2.1 or higher
- Storage capacity: ≥ 512 Kbytes
- Interface: RS-232 C
- Disc drive: ≥ 720 Kbytes

**1.2.2 Installation**

The operator interface program TZAKON may be supplied as:

- TZAKON disc No. 3100925x, 5.25" 360 Kbytes
- TZAKON disc No. 3100970x, 3.5" 720 Kbytes

The standard TZA 4 programs (P programs) are supplied as program packages (divided into the various task areas) on separate discs. Two types of discs can be supplied:

- TZA 4 disc Nos. 3100944x ... 3100967x, 5.25", 360 Kbytes
- TZA 4 disc Nos. 3100971x ... 3100994x, 3.5", 720 Kbytes

The TZAKON disc has an installation program JINSTALL.EXE" on it which enables the entire operator interface TZAKON to be installed on the hard disc or a floppy.

Procedure:

- Insert TZAKON disc into the disc drive A or B
- Select relevant disc drive A" or ,B"
- Type INSTALL and press the ENTER key

The following menu will appear:

```
Options:
1. Install TZAKON and TZA 4 programs
2. Install TZAKON without TZA 4 programs
3. Install TZA 4 programs additionally
0 End
Enter → █
```

If No. 1 is chosen, TZAKON will be installed together with the TZA 4 programs stored on the TZA 4-discs.  
 If No. 2 is chosen, then only TZAKON will be installed.  
 If No. 3 is chosen, further TZA 4 programs will be added to TZAKON already installed on the hard disc or floppy.

The INSTALL program creates the following directory on the disk:

```
Drive:  \TZAKON_____PROGFILE
                |_____DATFILE
                |_____B52DIR
```

The following are deposited in the directories: TZAKON:

- TZAKON.EXE (operator interface TZAKON)
- INITDAT.DAT (initialization file for TZAKON)
- HELPDAT.HLP (help file for TZAKON)
- Pxxx-xxx.EXE (parameterization program for the programs)
- Pxxx-xxx.HLP (help files for parameterization programs)

PROGFILE:

- Pxxx-xxx.HEX (P programs)

DATFILE:

- xxxxxxxx.DAT (parameter files of the P programs)

B52DIR

- xxxxxxxx.B52 (#programs)
- xxxxxxxx.B52 (userprogram)

### 1.3 TZAKON operating instructions

Once installed, the PC switches to the directory: drive:\TZAKON.

- The TZAKON program is called up by keying inTZAKON and pressing the ENTER key.
- Press any key and the START MENU is displayed. All of the main functions of TZAKON can be called up from this menu.

Selection	Init / Info
Scope of tasks/ programs	
Parameter files according to order nos.	
Parameter files according to file nos.	
Parameter files according to manufacturing nos.	
Programs/ files from the TZA 4 directory	
Program creation/ terminal mode Info TZA 4 / Init TZAKON	
<F1> HELP	<ENTER> OK? <span style="float: right;">&lt;F9&gt; EXIT</span>

Bild 1-1 START MENU

Table 1 (Overview of TZAKON/TZA options) gives an overview of all TZAKON functions and the necessary ancillary data. For each function the relevant sections which describe that function in greater detail are given. The menu path stated in the sections shows the steps necessary to reach the described function.

Example: Selecting a program

Menu path: → START MENU → SCOPE OF TASKS PROGRAMS

### 1.4 TZAKON Function keys

Special TZAKON functions have been assigned to some function keys (F1 ... F9) of the PC keyboard to facilitate easy use. These functions are in each case displayed in the bottom line of the screen.

They have the following meanings:

- <F1> HELP:           The Help text for the particular menu screen chosen or for the parameterization program is displayed.
  - PgUp: Help text scroll forwards
  - PgDown: Help text scroll backwards
  - ESC:   Exit Help text
- <F2> MENU:           User program menu appears
- <F8> RETURN:         Return to previous screen

<F9> EXIT: Return to operating system  
 START MENU: Return to Start menu  
 FILE MENU: Return to File menu  
 <ENTER>OK? Chosen menu line/input value is confirmed (etc.)

Aids/ Operating instructions	Functions										
	P programs (Programs with paramete files)			# programs (Programs without parameter files)			User programs				
	Load P program into TZA 4 Start Save	Parameterize P program Print out file	Read out parameter file from TZA 4 Print	Load # program into TZA 4 Start Save (Print)	Parameterize # program (Print)	Read out current # program from TZA 4 (Print)	Load user program into TZA 4 Save (Print)	Generate user program (Print)	Modify user (Print)	Read user program from TZA 4 (Print)	TZA 4 ON-LINE editor
<b>Hardware:</b>											
TZA 4	yes	no	yes	yes	no	yes	yes	no/yes	no/yes	yes	yes
PC	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Printer	no	(yes)	(yes)	(yes)	(yes)	(yes)	(yes)	(yes)	(yes)	(yes)	no
<b>Software:</b>											
TZAKON.EXE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
P programs	yes	yes	yes	no	no	no	no	no	no	no	no
Parameter files	yes	yes	no	no	no	no	no	no	no	no	no
# programs	no	no	no	yes	yes	no	no	no	no	no	no
USER programs	no	no	no	no	no	no	yes	no	yes	no	no
<b>TZAKON/TZA 4</b>											
Initialization	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
<b>Procedure</b>	2.2.1	2.2.1	2.3.1	3.2.1	3.2.1	3.2.2	3.2.2	3.2.2	3.2.2	3.2.2	3.2.2
See Sections:	2.2.2	2.2.2	2.2.4	or	or	3.2.9	3.2.6	4.2.1	3.2.6	3.2.9	4.3.1
	or	or	2.2.5	3.2.2	3.2.2	3.2.3	3.2.7	3.2.5	3.2.3	(3.2.12)	
	2.2.3	2.2.3		3.2.6	3.2.6	(3.2.12)	(3.2.8)	(3.2.7)	3.2.5		
	2.2.6	2.2.4		3.2.7	3.2.3		3.2.10	(3.2.8)	(3.2.7)		
	(2.2.7)	2.2.5		(3.2.8)	3.2.5		(3.2.11)	(3.2.12)	(3.2.8)		
	2.2.8			3.2.10	(3.2.12)		(3.2.12)		(3.2.12)		
	(2.2.9)			(3.2.11)							
				(3.2.12)							

Tabelle 2-1 TZAKON/TZA 4 action overview

**1.5 Information data TZA 4**

**1.5.1 Initialization of TZAKON**

Menu path: → START MENU → Info TZA 4/Init TZAKON

Selection	Init / Info
Free program memory in TZA 4	
Blank check of EPROM program memory in TZA 4	
Selection of the serial COM interface of the PC	
Defining of printer Set date/time of TZA 4 to date/time of PC	
Print TZAKON HELP text	
<F1> HELP <ENTER> OK? <F8>RETURN<F9> FILE MENU	

Bild 1-1

**1.5.2 Reading out TZA 4 identification data**

Menu path: → START MENU → Info TZA 4/Init TZAKON

The following are read out from the TZA 4 and displayed:

- Apparatus designation
- Serial number of the TZA 4
- Date of manufacture of the TZA 4
- Reference number of the operating system EPROM
- Version number of the operating system EPROMs

**1.5.3 Free program memory in the TZA 4**

Menu path: → START MENU→ Info TZA 4/Init TZAKON

Display of free program memory in the TZA 4 EPROM 2		
Free EPROM 2 memory for program/files		23690 bytes
Free EPROM 2 memory for Auto-Start entries		808 bytes
<F1> HELP	<F8>RETURN	<F9> START MENU

Bild 1-1

The following are displayed:

- Remaining free memory for programs and parameter files
- Remaining free memory for entries to the Auto-Start list in EPROM 2 of the TZA 4

The available memory is given in bytes.

The following space is required:

For each entry in the Autostart list: 2 bytes

When saving a program + file: x bytes

(x is dependent on the program and the file length; approximate value 2 kbytes).

**1.5.4 Blank check of program memory EPROM 2 in TZA 4**

Menu path: → START MENU → Info TZA 4/Init TZAKON

A blank check of the new EPROM is imperative following change.

Pre-condition:

- The new EPROM 2 must be completely blank before the first program can be „burnt in“.
- Only EPROMs of type 27C256 and 12 V operating voltage and an access time of ≤ 200 ns may be used.

**1.5.5 Choosing the serial COM interface of the PC**

Menu path: → START MENU → Info TZA 4/Init TZAKON

Display 2	Serial COM interface	
	Serial interface COM1**	
	Serial interface COM2	
<F1> HELP	<F8>RETURN	<F9> START MENU

Bild 1-1

Either the COM1 or COM2 serial PC interface may be chosen. The interface designated \*\* is the chosen one. The number of the chosen interface is stored in INIT.DAT (see Section 1.2).

### 1.5.6 Setting the printer

Menu path: → START MENU → Info TZA 4/Init TZAKON

Either 68 or 72 lines per page may be selected for the print-out. The number with \*\* is the chosen one. The number chosen is stored in INIT.DAT.

### 1.5.7 Setting the TZA 4 date/time to correspond to that of the PC

Menu path: → START MENU → Info TZA 4/Init TZAKON

The real-time clock in the TZA 4 is synchronized with the PC clock. If necessary, check the PC clock in DOS and correct it.

DOS command:   DATE - Date  
                  TIME - Clock time



#### **CAUTION!**

In the event of power failure the TZA 4 clock will stop. It will start again upon restoration of power and restart of a program with DATE-TIME (1).

### 1.5.8 Printing the TZAKON Help text

Menu path: → START MENU → Info TZA 4/Init TZAKON

The entire TZAKON Help text is output to the printer (approx. 20 pages DIN A4).



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In accordance with the state of the art, despite intensive testing, errors in the software cannot be ruled out.

A demonstrable program error notified in writing by the purchaser to ABB will be corrected free of charge by ABB within reasonable time.

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