Operating Instructions for the Industrial PC MIC3210

Safety regulations

Only switch off the PC after the software has been terminated

Before you may switch off the Industrial PC, the software that is running on it must be properly terminated.
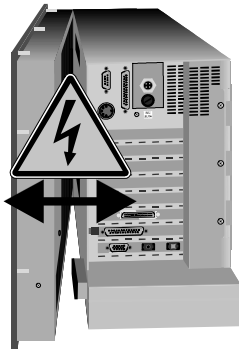If not, data on the hard disk may be lost. Please also refer to the section "Switching off the PC".

Switch off all the installation components and then disconnect the field bus.

Before you open the PC housing and whenever the PC is not being used for control purposes, for example during the operational check after it has been repaired, you must first switch off all the installation components and then disconnect the Industrial PC from the installation.
The PC is disconnected by removing the connectors for the field bus. In the case of PCs with an NC rear panel, all the plug-in connections on the rear panel must also be disconnected.
Installation components that are switched off must be prevented from being switched on again.

The LC display in the Industrial PC is operated with a voltage of up to 1,000 V, depending on the display type. You should therefore note the following:
Before opening the front part of the housing, you must switch off the supply voltage.

Do not replace any live parts

The voltage supply must be switched off when you fit or remove components.
Damage may be incurred in the PC as a result of assembly work:
- if metal objects such as screws or tools are dropped on printed circuit boards that are in operation
- if internal PC connection cables are disconnected or connected during operation
- if plug-in boards are fitted or removed when the PC is switched on.

Operator requirements

National regulations depending on the type of machine

Checking regulations

Depending on the type of machine and installation in which the Industrial PC is used, the operator will have to comply with national regulations for the control systems of such machines and installations. Amongst other things, these regulations stipulate at what intervals of time the control system has to be checked.
The operator must ensure that this check is carried out in due time.

Only specialist staff must open the PC housing

The operator must ensure that only trained specialist electrical staff open the housing of the Industrial PC.

Software know-how

Every user must be familiar with all the PC software functions that he or she can access.

Make the operating instructions available

The contents of these Operating Instructions must be familiar to all users of the Industrial PC and any engineer fitting, removing or opening the device.

Actions is the event of a malfunction

In the event of malfunctions on the Industrial PC, you can use the list in the section "Malfunctions" to determine which actions you should take.

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User requirements

Read the Operating Instructions

All users of the Industrial PC must have read these Operating Instructions.

Software know-how

Every user must be familiar with all the PC software functions that he or she can access.

Proper use

The Modular Industrial Computer MIC3210 is designed for industrial use in machine and plant engineering. A complete IBM-compatible PC with a main board, hard disk, disk drive, machine-compatible keyboard and LC display is located in a 19" fitted housing.

Do not use the PC out of doors	**The Industrial PC must not be used out of doors. During operation, the following technical data must be observed:**	
Environmental conditions	Ambient temperature:	5 to 45 °C, limited due to the restricted temperature stability of the LC display
	Humidity:	Maximum of 95% non-consendating
Resistance to shock and vibrations	Housing & chassis:	Vibrations: 5G at 10 to 55Hz
		Shock resistance: 30G
	Disk dive:	Vibrations: 0.5G at 5 to 500Hz
		Shock resistance: 5G
	Hard disk:	Vibrations: 0.5G at 17 to 500Hz
		Shock resistance: 10G
	LC display:	Vibrations: 1G at 58 to 500Hz
		Shock resistance: 50G
	Protection class:	Front: IP65
		Rear: IP30
Power supply 24 V DC power pack	Supply voltage:	24 V direct current
		Permitted fluctuations: 15 to 35 V DC
	Max. power draw:	2 A
	PC fuse:	Fine-wire fuse M 3.15 A
Electromagnetic compatibility	Emissions:	Conforming to EN 50081-2
	Immunity:	Conforming to EN 50082-2

Transport and storage	During transport and storage, the same values for humidity and resistance to shock and vibrations must be observed as in operation. The resistance to shock and vibration can be increased by transporting the Industrial PC in suitable packaging. The ambient temperatures for storage and transport must be between -20 °C and +60°C.

Operating the Industrial PC

Switching on the PC	The Industrial PC does not have its own power switch. When the machine or installation is switched on, the Industrial PC is also started.
Switching off the PC	Control software as typically used on industrial PCs allows different authorizations to be assigned to all the users. A user who is not allowed to terminate the software, is also not allowed to switch off the Industrial PC, since data might be lost on the hard disk if the PC is switched off while software is still running. If the Industrial PC is switched off while the software is writing a file to the hard disk, this file will be destroyed. Control software normally writes something to the hard disk independently at intervals of a few seconds. This means that the probability that you will cause damage when you switch off the PC with the software still running is very high.

Operation

The cursor is the flashing character which indicates the position at which the next character to be input is displayed. The cursor keys move the cursor one position in the desired direction.

The Home key moves the cursor to the beginning of the line, while the End key moves it to the end of the line.

Die Page Down key scrolls the display one page ahead, while the Page Up key scrolls the display one page backwards.

The tabulator key causes the cursor to jump to the next input field. To return to the previous input field, press the shift and tabulator keys simultaneously.

The Help key opens a help window on the current program item in the software. This key corresponds to the F12 key on a standard keyboard.

Delete deletes the character to the right of the cursor.

If you press Insert, the characters to the right of the cursor are overwritten. Overwrite mode is exited by pressing this key again.

Print Screen outputs a hardcopy of the screen on the printer.

The Pause key causes the computer to pause until another key is pressed.

To confirm your inputs, press the Enter key.

Backspace deletes the character to the left of the cursor.

If you press the Shift key together with another key at the same time, you will not obtain any numbers, but the characters above them instead. Likewise, upper-case letters will be displayed, and not lower-case letters.

Similar to the Shift key, Ctrl and Alt also change the meaning of a simultaneously pressed key.

The Escape key is used to close dialog windows again and terminate computer processes.

You can adjust the contrast of the LC display with these two keys.

All the other keys cause the characters on them to be displayed at the cursor position.

The meaning of the function keys F1 to F10 is defined by the software and is displayed at the bottom margin of the display.

The function of the special keys above the display is also defined by the software. The function in question is shown at the upper display margin.

The special keys are each fitted with a red light-emitting diode which is controlled by the software.

Emergency measures   **In the event of it catching fire, the Industrial PC must be extinguished using powder or nitrogen.**

Maintenance and care

Maintenance-free   The Industrial PC is maintenance-free.

Cleaning   The front of the Industrial PC can be cleaned with a damp, soft cloth. Do not use any corrosive cleansing agent, no diluents, no scouring agents and no hard objects that could cause scratches. The Industrial PC must be switched

Switch off the Industrial PC   off before it is cleaned so as to prevent keys from being activated inadver-

first   tently.

Disposal

Remove the Industrial PC   To be disposed of, the device must be removed and completely disassembled.

and disassemble it   The metal housing parts can be recycled. Electronic components such as the

Observe national regulations   display, drives and circuit boards must be disposed of in accordance with na-

for disposing of electronic   tional regulations for disposing of electronic waste.

waste

Malfunctions

Malfunction	Cause	Actions
Industrial PC does not function after it has been started	No power supply	1. Check fuse 2. Measure mains voltage, check connector pinning 3. Call Beckhoff Service
The Industrial PC does not boot completely	A disk is in the drive	Remove the disk and press any key
	The hard disk is damaged (e.g. if the PC is switched off while software is running)	1. Boot with boot diskette 2. Start from SCANDISK
	Setup settings are incorrect	Check setup settings
	Other causes	Call Beckhoff Service
The systems boots, the software starts, but the control system does not function faultlessly	The cause of the error is in the software or installation parts outside the Industrial PC	Call the machine or software manufacturers.
Error in accessing disks	Faulty disks	Check the disk in another PC
	Faulty drive	Call Beckhoff Service
The Industrial PC only functions partially or temporarily e.g. no screen display, but the disk drive responds when the PC is switched on	Components in the PC are faulty	Call Beckhoff Service