

User Manual

Industrial PCs Board Version N7

3003-US

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Technologies

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1 Enclosure and mainboard types

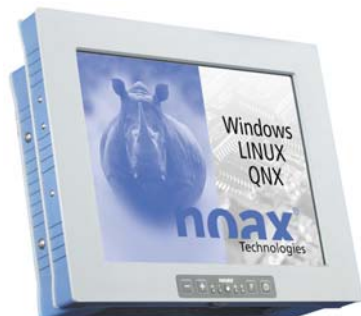
1.1 Enclosure types



C8 – Compact enclosure 8 inch



P8 – Front installation enclosure 8 inch

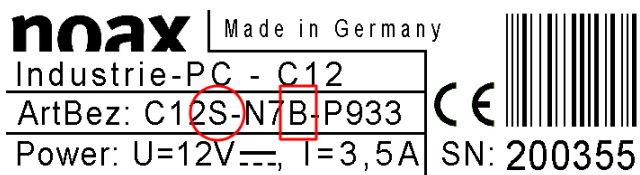


C12 – Compact enclosure 12 inch



P12 – Front installation enclosure 12 inch

1.2 Mainboard types



The type of your N7 mainboard is indicated on the rating plate. (A or B)

Also the used type of display is indicated on the rating plate:
Extension S or X at the end of enclosure type e.g. S12S oder S12X

Differences between the types are described in the technical data in Chapter 9.



For more information please check our website at www.noax.com

1.3 Optional Accessory



VESA 75 Holder



Dampening unit



Connector cover C8



Connector cover C12



Device bracket



RFID reader



Touchpen



External keyboard



Sun shield



Heating for C8

2 **Safety**

To avoid injury and damage, please read and observe the following usage and safety information before initial operation.

The manufacturer/supplier is not liable for any damages caused by non-compliance with this information.

2.1 **Pictograms and symbols**

The following pictograms and symbols are used in this operating manual:



Potential life-threatening danger sources are indicated by a warning sign with an exclamation point. This sign also applies to any possible damage to the device.



Potential life-threatening danger sources from electricity are indicated by a warning sign with a lightning symbol. This sign also applies to any possible damage to the device.



Potential life-threatening danger sources from heat are indicated by a warning sign with a heat symbol.



Potential life-threatening danger sources from explosion are indicated by a warning sign with an explosion symbol. This sign also applies to any possible damage to the device.



The symbol indicates instructions that must be observed.



Very important information is marked in bold.



Lists and requirements are marked with a black dot.



Handling steps for operators are indicated by a black arrow.

2.2 **Intended use**

Your Industrial PC has been manufactured using the latest technology and meets established safety regulations.



The Industrial PC should only be used when it is fully functional and free of damage!

Malfunctions that can affect safety (e.g. faulty power cable or enclosure) must be immediately eliminated by you or a third party in accordance with specifications!

Our professional service department will be happy to carry out any necessary repairs for you. Please refer to the notes on handling repairs through our service department in chapter 8.2.

2.3 Safety information



It is imperative that you read this manual before operating the Industrial PC.

This manual must remain with the Industrial PC and be passed along with it.

Observe all accident prevention and safety instructions.

Make sure that liquids and caustic vapors (e.g. from cleaning agents) are not able to penetrate the interior of the NEMA protected electronics.



Repairs to electronic devices should only be carried out by authorized personnel. Improper work on electrical and electronic devices could cause life-threatening electric shocks.



These devices contain electronic components with highly integrated modules or modular elements. These electronic components are highly sensitive to surges as well as the discharge of static electricity. To avoid damage, you should discharge the static electricity from your body before handling any system components. When working on electronic components, please use an approved ESD wristband.

Power supplies

The power supply should not be opened for any reason. It does not contain any serviceable components.

When attaching the power supply, only use the supplied mounting frame, or use the available drill holes (do not attach to the cable). To avoid overheating, it should not be covered or installed in an enclosure that is too small. For safety reasons, it should be installed in such a way to allow disconnection from the mains supply at any time.



The power supply must not be positioned in the enclosure or in the plug area of the Industrial PC. This would create a risk of overheating.

The power supply should only be connected to the mains supply using a protective earth conductor. Only use the supplied power cable as it meets all important safety regulations.

The Industrial PC should only be operated using the provided power supply or the optional provided connection cable with integrated fuse.

Ensure that the electrical specifications on the attached label correspond to the used power supply!

External Devices

External devices (e.g. maintenance floppy, scanner...) should only be connected/disconnected to/from the Industrial PC when it is switched off. Otherwise, this could damage the Industrial PC electronics or the external device itself. Wait at least five seconds after switching off the Industrial PC before connecting an external device (exception: Hot Plug devices connected to USB ports).

When connecting cables to the Industrial PC, make sure that there is no tensile loading on the cable.

2.3.1 Upgrades and maintenance work on the Industrial PC



The Industrial PC must be disconnected from the power supply before the device is opened for upgrades or service work! Disconnect the power cord from the "Power 12V" connector on the Industrial PC. It is not sufficient to just turn off the device.

The Industrial PC should only be opened by authorized personnel with basic knowledge of PCs. The warranty is voided by improper upgrades and maintenance work. When in doubt, let our service department perform this work. Please contact our hotline under:

Hotline Europe		Hotline North America	
Tel.	+49 (0) 8092 8536 33	Tel.	+1 941 922 1150
Fax	+49 (0) 8092 8536 55	Fax	+1 941 927 1330
eMail:	hotline@noax.com	eMail:	hotline@noaxna.com



Faulty and damaged electrical equipment and parts should only be replaced by authorized electricians.



When opening the device, please be aware that some parts and components become hot during operation (e.g. memory). These components should be allowed to cool before being handled.

Batteries

Only use batteries of the same type, or similar types recommended by the manufacturer. Please dispose of batteries in accordance with manufacturer instructions.



An explosion hazard will be created if the CMOS battery is installed incorrectly. Install the battery with the "+" sign up (the "+" sign must be visible after installation).



Make sure that there is no potential equalization thru the device. (e.g. by ground loops)

2.3.2 Touch display

To avoid damage and malfunctions, do not contact the touch display surface with pointed, sharp, hard and rough surfaces.

Touch-sensitive protective film for extreme conditions is available as an optional accessory.

Do not hit or strongly press down on touch and display surfaces as this could cause damage or disruptions (e.g. resulting in glass breakage).

Do not place the Industrial PC face down on a hard surface. If necessary, put a soft cloth or piece of foam under it, and make sure that nothing damages the touch display (e.g. screws).

Do not wipe the touch display surface with articles of clothing or sponges because this could scratch the surface (e.g. buttons in jacket sleeves or grit in sponges).

Please also refer to the additional information in chapter 7 "Maintenance and cleaning the Industrial PC."

3 Power supplies

3.1 External table power supply

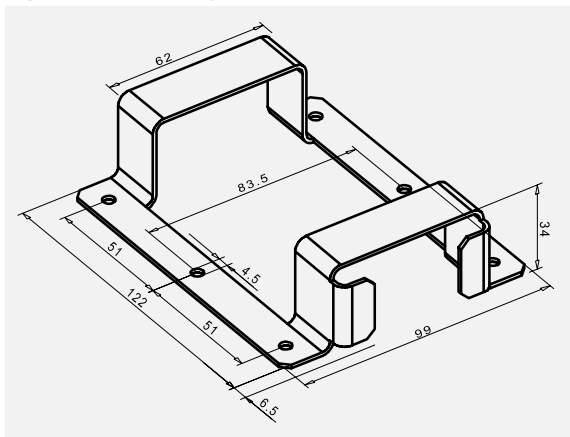
Fig. 1 External table power supply unit



The external table power supply unit has the following components:

- Power cord
- Power unit with connecting cord to the device
- Mounting frame

Fig. 2 Assembly frame



The mounting bracket serves the purpose of holding the external power supply unit. The external power supply unit can be mounted directly on the wall, for example, using the mounting holes in the bracket.



The power supply must not be positioned in the enclosure or in the connector area of the Industrial PC. This would create a risk of overheating.

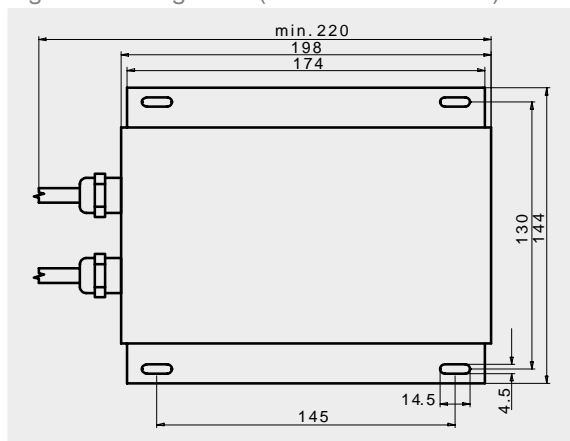
3.2 External power supply NEMA4 (IP65)

Fig. 3 External power supply NEMA4 (IP65)



The external power supply with protection system NEMA4 (IP65) can be attached e.g. directly to the wall using the fixing holes.

Fig. 4 Fixing holes (all dimensions in mm)



To install the external power supply, copy the drilling spacing shown in the drawing to the wall onto which you wish to attach the equipment.

4 Installation

4.1 Installation site

The Industrial PC is designed for harsh operational conditions.

Nevertheless, please observe the following rules for installation:

- Avoid strong exposure to sunlight on the display since it will make reading difficult.
- Do not expose the Industrial PC to direct heat. Make sure that there is sufficient cross-ventilation at the rear panel or rather at the rear cooling fins.
- Allow at least 15 mm more depth for front installation devices to ensure sufficient air circulation.



The device will automatically turn itself off when it overheats or the temperature falls below a certain point.

- Do not mount the Industrial PC on equipment that strongly vibrates. If this is unavoidable, mount the device on shock absorbers and vibration dampers.
- If the device is to be installed on a fork-lift or similar vehicle, you **must take additional measures for shock and vibration dampening** (available as an option: "Conversion for mobile use" = additional securing of connectors and cables).

We have designed special device holder for these applications. You can get them as special assembly accessory.



You can find more information about installation and various device holders on our web page www.noax.com.

4.2 Mounting the C8 / C12 compact enclosure

4.2.1 VESA 75 mounting option

Fig. 5 VESA 75 mounting option C8



Fig. 6 VESA 75 mounting option C12



The Industrial PC in the C8 and C12 compact enclosure can be mounted via the heat sink on the back. The four holes in the heat sink complies with the VESA 75 standard (75 mm x 75 mm, M6 thread, 10 mm deep).

The following examples illustrate options for the VESA 75 standard:

- noax device holder with spherical head
- noax dampening unit
- Commercially available VESA 75 brackets



The side holes in the enclosure frame are designed for additional accessories as device brackets or external keyboard holders. Additional accessories can be attached via these eight holes (covered with screws – M5 thread). These screws do not have to be removed to open the Industrial PC.

4.2.2 Device holders (optional)

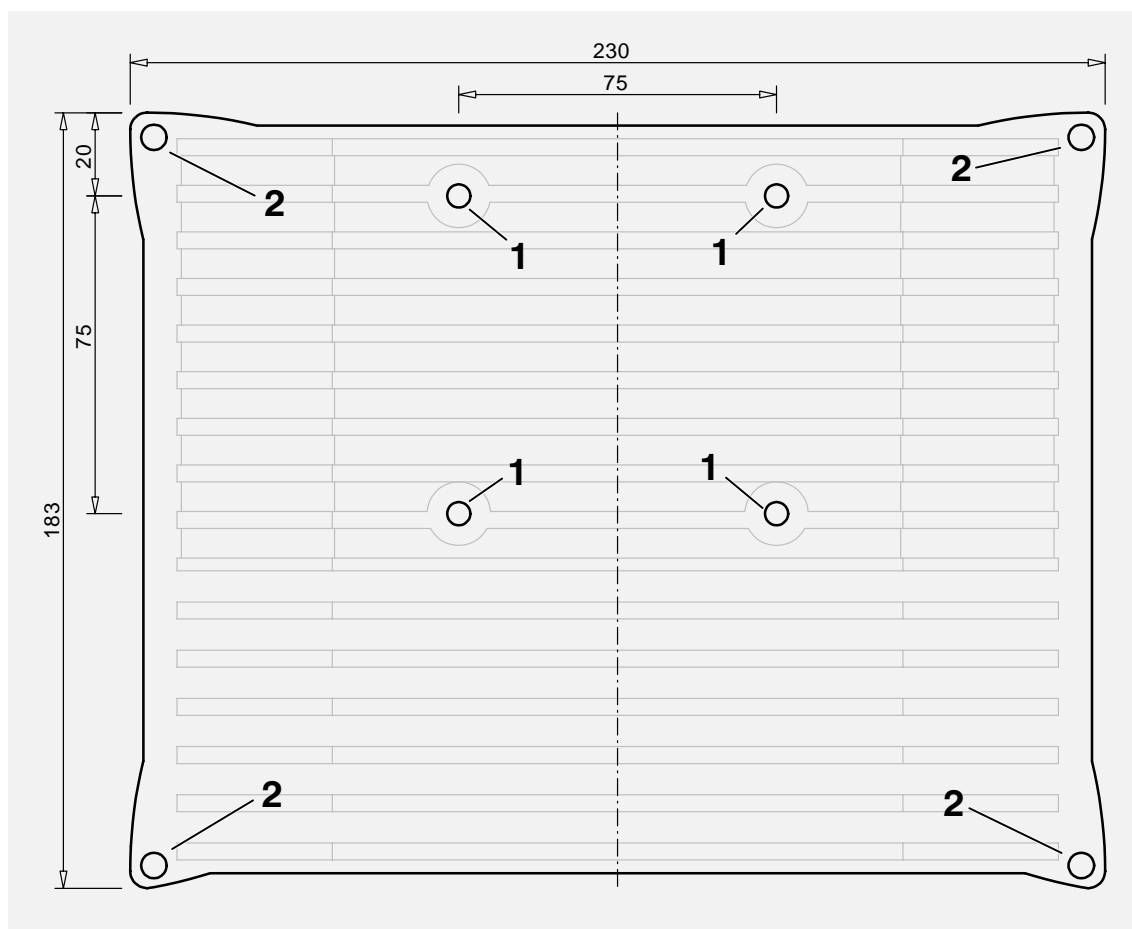
Various device holders and wall mounting brackets are available as additional accessory for the Industrial PC. This provides you with numerous mounting options in different positions.



Caution – Risk of injury:
Check and make sure that the device holder is securely and stable attached.

4.2.3 Back side of C8 / P8 enclosure

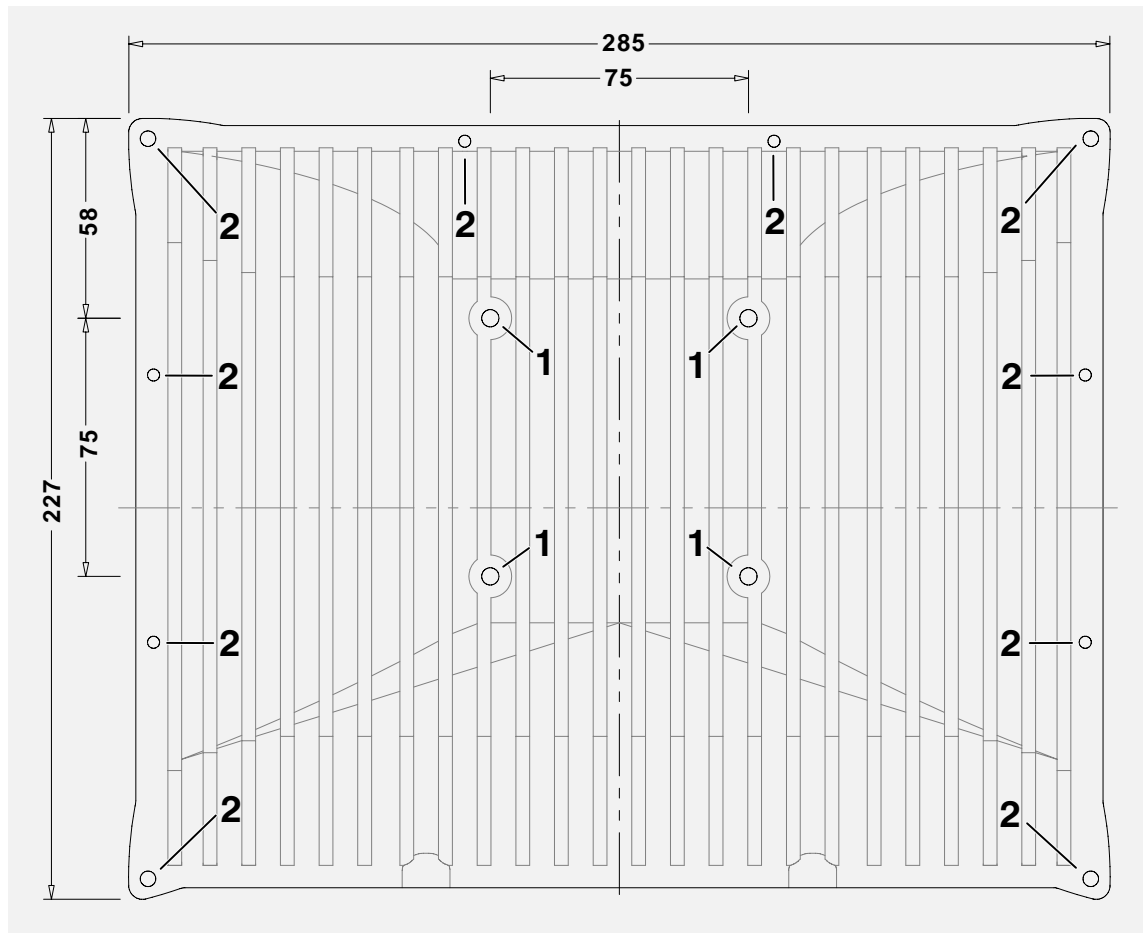
Fig. 7 Back, C8 / P8 enclosure (all dimensions in mm)



- 1 – VESA 75 mounting option (M6 thread)
- 2 – Enclosure screws

4.2.4 Back side of C12 / P12 enclosure

Fig. 8 Back, C12 / P12 enclosure (all dimensions in mm)



- 1 – VESA 75 mounting option (M6 thread)
- 2 – Enclosure screws

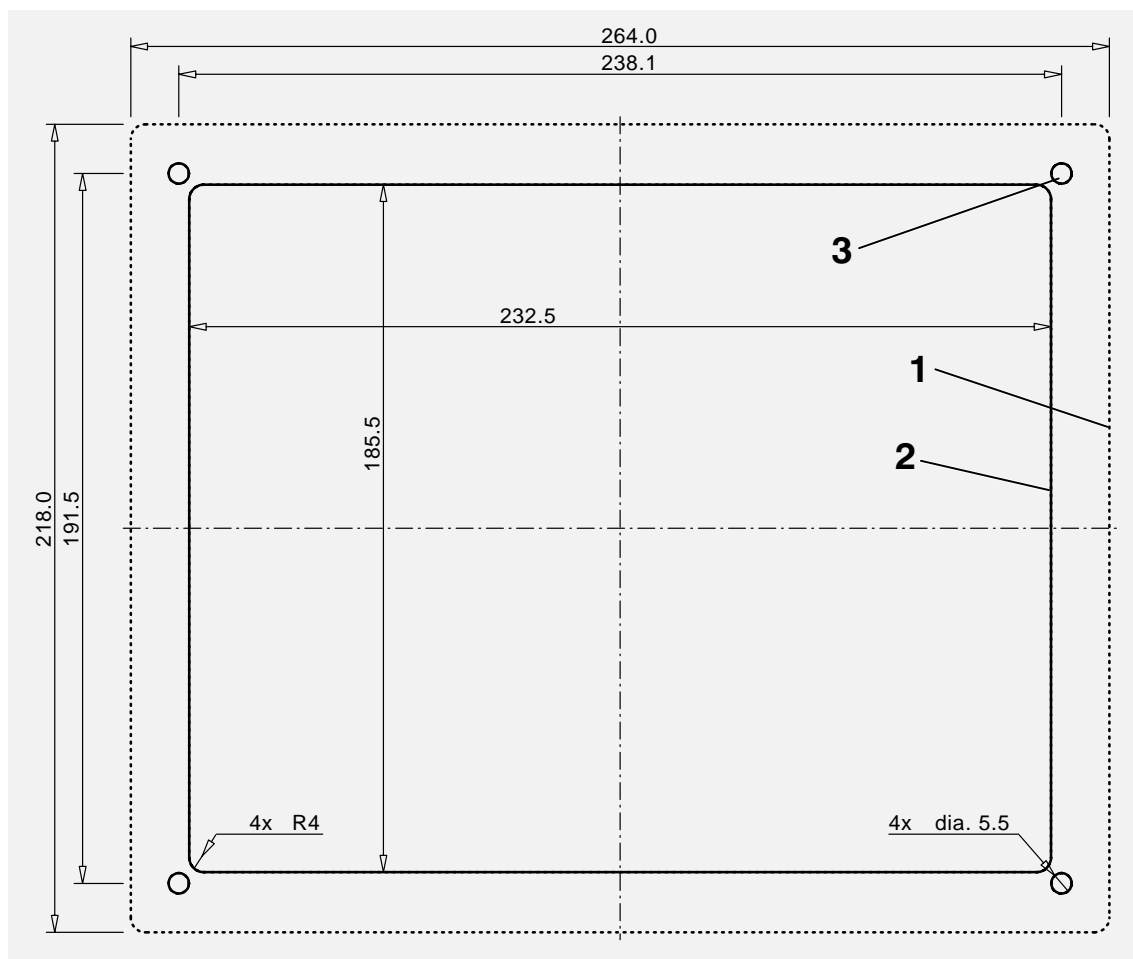
4.3 Mounting the P8 / P12 front installation enclosure



To ensure proper air circulation, you should provide 0.6 inch (15 mm) additional depth for installation.

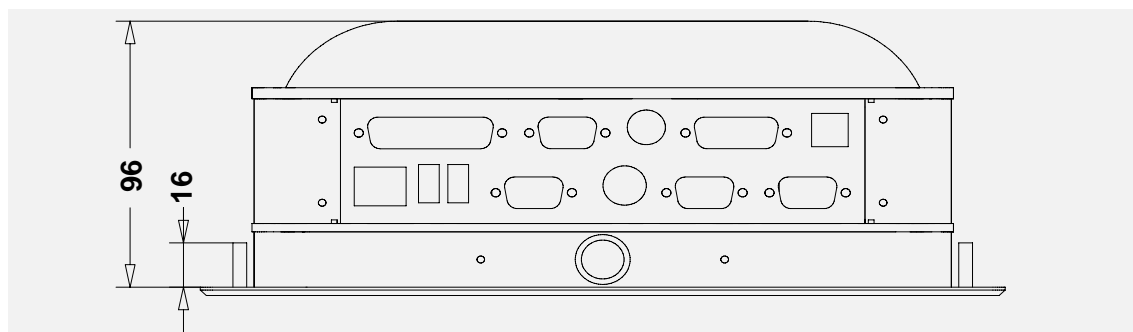
4.3.1 Installation cut-out for P8 enclosure

Fig. 9 Installation cut-out, P8 front installation enclosure (all dimensions in mm)



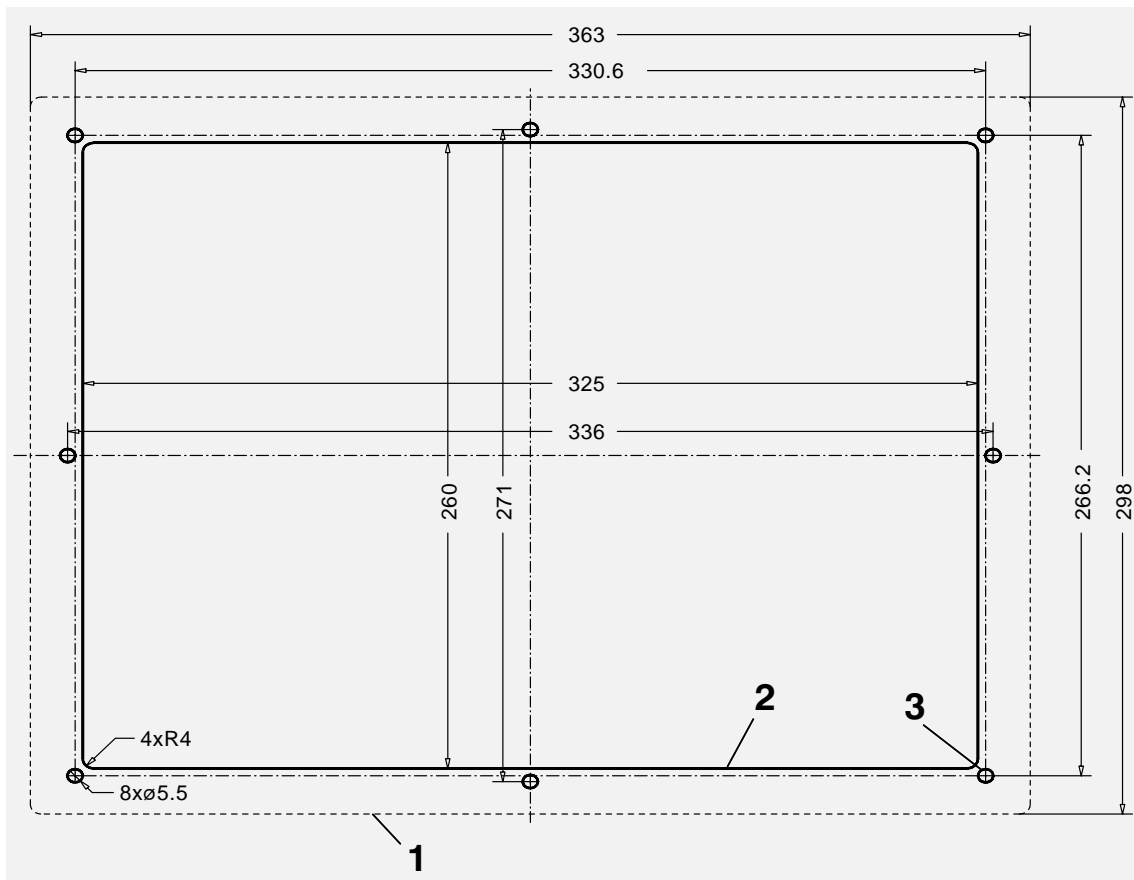
- 1 – Outside edge of front panel
- 2 – Installation cut-out
- 3 – Fastening holes (4 x 5.5 mm)

Fig. 10 Unit depth, P8 front installation enclosure (all dimensions in mm)



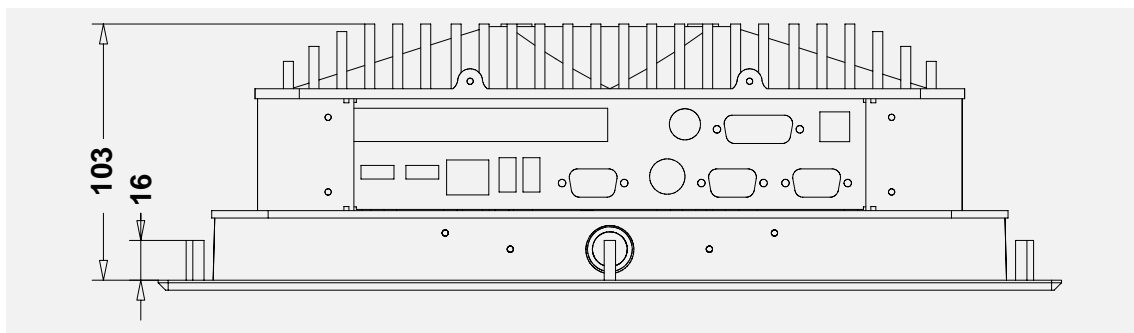
4.3.2 Installation cut-out for P12 enclosure

Fig. 11 Installation cut-out, P12 front installation enclosure (all dimensions in mm)



- 1 – Outside edge of front panel
- 2 – Installation cut-out
- 3 – Fastening holes (8 x 5.5 mm)

Fig. 12 Unit depth, P12 front installation enclosure (all dimensions in mm)



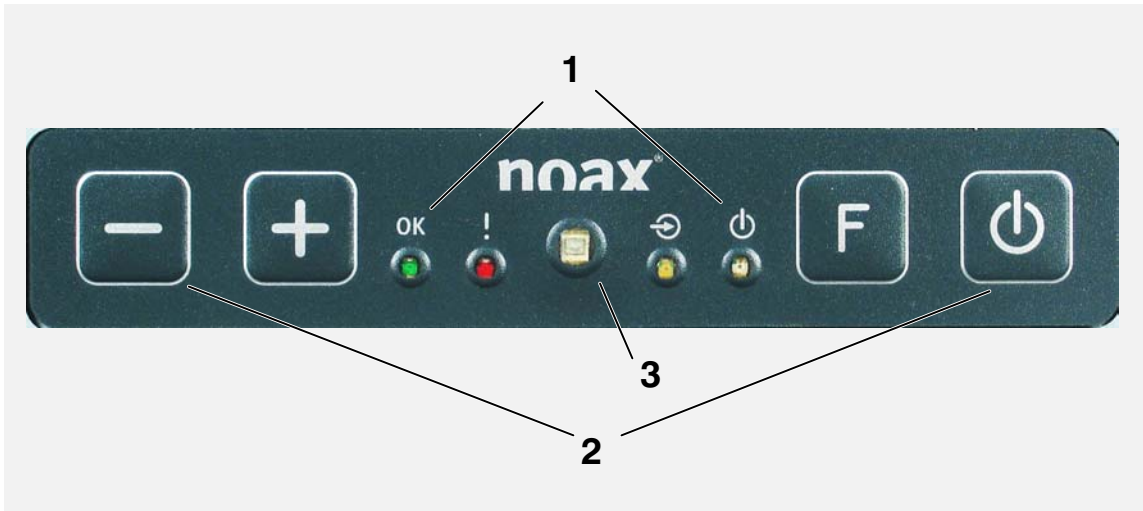
For more information on mounting options, please check our website www.noax.com.

5 **Operation**

5.1 **Display and operation elements**

All display and operation elements are located on the front of the operator console. These include buttons, indicator lights (LEDs) and an ambient light sensor (ALS).

Fig. 13 Operation and display elements



- 1 — Displays (LEDs for OK, ERROR, INPUT, POWER)
- 2 — Buttons (Minus, Plus, Function and On/Off)
- 3 — Ambient light sensor (ALS)

5.1.1 **General button information**

The INPUT LED lights up/flashes when a button is pushed. Buttons should be pushed in the center of their respective symbol.

- ❗ Operation and display element functions can be changed, limited or deactivated using the Setup-Software “NSetup”. The following overviews describe functions at their default factory setting.
- ❗ For information regarding the operation and function of the Setup-Software “NSetup”, please see chapter 6.

5.1.2 **Displays (LEDs)**

LED	Function
OK (green)	The Industrial PC is operational. All systems monitored by the MCU are working properly.
ERROR (red)	Shines when an error or an critical event occurs with the Industrial PC hardware. ❗ See Error Handling, chapter 8.
INPUT (yellow)	Lights up when a valid input is made.
POWER (blue)	Shines when the Industrial PC is turned on.

5.1.3 Buttons

Button	Function
– (Minus)	Reduces brightness of display backlight
+ (Plus)	Increases brightness of display backlight
F (Function)	Function button for implementing special software functions
⏻ (On/Off)	Switches the Industrial PC on and off Switches the display backlight on and off Hard reset or software shutdown initiation

5.1.4 Ambient light sensor (ALS)

An ambient light sensor is located in the center of the operator console. Its purpose is to adjust the brightness of the display backlight to the available ambient light. The Setup-Software "NSetup" can be used to turn the sensor on or off and to individually adjust the brightness.

5.2 Operation

Function	Default factory setting
Switching on the Industrial PC	► Press [On/Off] button for a minimum of 1 second
Switching off the Industrial PC	► Press [On/Off] button for a minimum of 6 seconds (until it turns off).
Setting brightness of display backlight	► Briefly press the [+] or the [–] button to change the brightness by one level ► To change the brightness over a wider range, press and hold down the [+] or the [–] button
Switching display backlight on / off	► Briefly press [On/Off] button
Shutting off the software	► Press and hold the [On/Off] button. (intermittent beep, Power LED blinks) Release after 3 seconds (fast, intermittent beep, Power LED blinks faster) This function is only available on operating software with ACPI-support
Resetting the mainboard	► Press and hold both the [On/Off] <u>and</u> the [–] button for more than 3 seconds
Starting with factory default settings (Default setup)	► Press and hold both the [F] <u>and</u> the [+] button, and then activate the power (OK LED blinks)
Switching touch cleaning mode on / off (touch function deactivated)	► Hold down the [F] <u>and</u> the [+] <u>and</u> the [–] button for longer than 1 second (INPUT LED blinks). For more information, please see chapter 7.

5.2.1 Display backlight

The display backlight is dimmed to a pre-set lower brightness level 3 minutes after the last button is pressed or touch display is used.

Function	Default factory setting
Dimming	► 3 minutes after the last button is pressed or touch display is used
Reactivation	► Press any key on the external PS/2 keyboard (only PS/2, not USB) ► Press the ON/OFF button ► Touch the touch display or move the PS/2 mouse



You can reactivate the display backlight by briefly pressing the [On/Off] button.

5.2.2 “Touch Power On” function

This function allows users to switch on the Industrial PC by specifically pressing the touch panel. Two previously defined pressure points must be pressed and held in the right sequence and within a certain time.

Fig. 14 Switching on the device via the touch panel



Procedure and sequence of steps to switch the device ON via the touch surface (factory setting):

- ▶ Press and hold the top left corner.
- ▶ Within 3 seconds press and hold the bottom right corner.

Now there is an intermittent beep and the POWER LED should start to flash if there is a control panel. The device will switch on after 3 seconds



The function immediately aborts if the correct sequence of pressure points is not adhered to, the pressure points are released during the switching-on period or the first pressure point is pressed for longer than the time specified in the timeout period. In this case release the touch surface and restart with the first pressure point.



The graphical setup software “NSetup” (GUI version, version 2.23 or higher) is used to activate or deactivate this function, calibrate the pressure points and to adjust the switching on times and the timeouts.



You can find the “NSetup” tool and other detailed information about the “Touch Power On” function on our website at www.noax.com

5.3 Connectors

5.3.1 Connectors in connector area

Fig. 15 Connector area C8 / P8 / **Standard version**



Fig. 16 Connector area C8 / P8 / **Low-Profile-version**



1 — Free low-profile PCI expansion slot

Fig. 17 Connector area C12 / P12



1 — Free standard PCI expansion slot



All device plugs should only be inserted and removed when the power is off.
(exception: USB cable)



Caution: Connector for self-locking plugs

The "Power" and "Mouse/Keyboard" port has a self-locking connector system.

To remove, push back on the plug's black plastic cover. This also makes insertion easier.

5.3.2 Adjustments of supply-output over serial interfaces

With a special adjustment it is possible to use Pin 4 of the serial interface COM1 or COM2 to supply an 5V or 12V output for external devices. To do the adjustment you have to open and disassemble the Industrial PC .

You can find detailed informations about the necessary adjustments in the technical Manual for N7-Mainboard. If you have additional questions please contact our hotline.

This Manual can be downloaded from the technical Download area on our website. (see chapter 8.4)

Serial interfaces with activated supply-output have to be marked in the connector area.

If the supply-output of an serial interface is activated by factory it is also marked in the connector area.

Optional labeling of serial interfaces COM1 / COM2 :	
P4/5	RS232 interface with 5 V supply-output (5 V at Pin 4)
P4/12	RS232 interface with 12 V supply-output (12 V at Pin 4)



Adjustments on the devices should only be carried out by authorized personnel.



The Industrial PC contains electronic components with highly integrated modules or modular elements. These electronic components are highly sensitive to surges as well as the discharge of static electricity. To avoid damage, you should discharge the static electricity from your body before handling any system components. When working on electronic components, please use an approved ESD wristband.

6 Setup software "NSetup"

6.1 The MCU in the noax Industrial PC

All noax Industrial PCs contain a microcontroller (MCU = micro controller unit) on the motherboard along with the CPU. The MCU monitors important system functions and also carries out additional control functions.

The MCU constantly monitors:

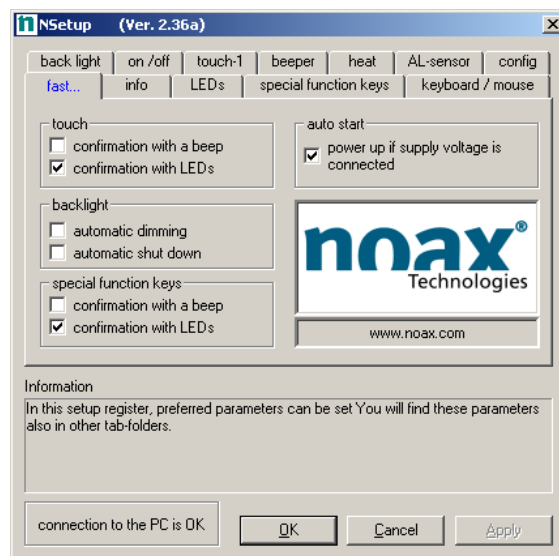
- All supply voltages (12V, 5V, core voltages ...)
- System temperatures
- Fan functions

If a monitored parameter falls below or exceeds a minimum value, an error message is triggered or the system is immediately switched off in extreme cases. These safety functions are designed to minimize damage to the Industrial PC (e.g. from excessive internal temperature).

6.2 Settings via setup software "NSetup"

The functions controlled by the MCU can be set using the setup software "NSetup" that has been specially designed for noax Industrial PCs.

Fig. 18 GUI of Setup software "NSetup"



The MCU parameters are clearly laid out and can be easily set using the Setup software user interface.

For example, you can set:

- Startup and shutdown functions
- Touch settings
- Functions for the LEDs and buttons in the operator console
- Control for display backlight
- "Touch Power On" function

i A command line version of the setup software for DOS or Windows operating systems is also available on request.

i For further information and the latest version of setup software "NSetup", please check the download area at section "Service and Support" at our website www.noax.com

7 Maintenance and cleaning the Industrial PC

7.1 General information

- ▶ Switch off device and disconnect it from power supply
- ▶ Use a commercially-available plastic cleaner and a soft, lint-free cleaning cloth
- ▶ Do not apply the cleaning agent directly to the Industrial PC. First apply to the cleaning cloth.
- ▶ Only clean with moist cloth (not wet – exception NEMA4 devices), and do not get cleaning agent under the Touch seals
- ▶ Gently clean surfaces and display window
- ▶ Completely remove cleaning agent from the device with a clean cloth.

For added protection against mechanical wear and tear, we also offer special protective films which can be replaced after they wear out.



Do not clean the display window with products containing abrasive substances. This will scratch and dull the surface.

7.2 Touch cleaning mode

The cleaning mode for the touch surface is activated by pressing the buttons [F], [+] and [–] on the operator console (hold down all three buttons for more than 1 second). The yellow INPUT LED will flash as confirmation.

The touch surface can now be cleaned: When it is touched, no data is sent to the operating system.

To deactivate the touch cleaning mode, press the buttons [F], [+] and [–] once again.



For more information please check our website at www.noax.com

8 Error detection and correction

This section provides information on the corrective measures to be taken when the device malfunctions.



If any of the following internal faults are present the devices will not switch on or will switch off automatically:

- Input voltage too high / too low
- Internal voltage too high / too low
- System temperature too high / too low

8.1 **N7 error codes**

When an error occurs, the integrated MCU displays an error code via the control panel LEDs which provide information about the error type.

When the ERROR LED is displayed continuously, the OK, INPUT and POWER LEDs will no longer have their normal function and will display an error code. Possible LED states are “off”, “slow blinking”, “fast blinking” and “on”.

Please make a note of each LED's state (=error code), type and serial number of the device and contact the noax hotline under:

Hotline Europe		Hotline North America	
Tel.	+49 (0) 8092 8536 33	Tel.	+1 941 922 1150
Fax	+49 (0) 8092 8536 55	Fax	+1 941 927 1330
eMail:	hotline@noax.com	eMail:	hotline@noaxna.com



Error code information can be found on the website in our online FAQ. (see chapter 8.3)

8.2 **Repairs**

Please observe the following to ensure fast and smooth repairs:

- Please use the service form available on our website at **www.noax.com**. It can be downloaded as a PDF or Wordfile. Please fill out the form as completely as you can, and include it with the return shipment.
- Before shipment, you should backup the hard drives of your device. **We are not responsible for any accidental loss of your data.**
- If your system is password protected, please delete the “Administrator” password or provide it to us. Otherwise, we will reset the password if necessary.
- Please package the device properly to ensure safe transport. Use the original packaging if possible. **We are not liable for any damages that may occur during transport.**
- We recommend using UPS Standard for shipping. The shipment must be prepaid. We will also accept unpaid UPS Standard shipments during the warranty period. We do not accept extra services such as express services, etc.
- In emergencies, we do offer loan equipment for the duration of the repairs for a small fee. Please check with our hotline.

8.3 FAQ – Frequently Asked Questions

Our FAQ list can be found on our website **www.noax.com** under **Service and Support**. This is the first place to check when you have a problem.

8.4 Technical download area

The technical download area can be found on our website **www.noax.com** under section **“Service and Support”**.

There you can find:

- ▶ Manuals and documentations for the Industrial PC and additional accessory
- ▶ Technical Manual for the mainboards
- ▶ Drivers e.g. for chipset, graphics controller, network controller
- ▶ Software e.g. setup software “NSetup”,

9 **Technical data**



Caution: Subject to change without notice

9.1 **Dimensions and weights**

Industrial PC in C8 enclosure:	9.1 inch x 7.3 inch x 3.9 inch (W x H x D) 232 mm x 185 mm x 99 mm (L x B x H) Approx. 8.4 lb (3.8 kg, depending on configuration)
Industrial PC in P8 enclosure:	10.4 inch x 8.6 inch x 3.9 inch (W x H x D) 264 mm x 218 mm x 99 mm (L x B x H) Approx. 8.4 lb (3.8 kg, depending on configuration)
Industrial PC in C12 enclosure:	12.6 inch x 10.0 inch x 4.2 inch (W x H x D) 321 mm x 256 mm x 106 mm (L x B x H) Approx. 12.3 lb (5.6 kg, depending on configuration)
Industrial PC in P12 enclosure:	14.3 inch x 11.7 inch x 4.1 inch (W x H x D) 363 mm x 298 mm x 103 mm (L x B x H) Approx. 12.3 lb (5.6 kg, depending on configuration)
External table power supply:	5.3 inch x 2.3 inch x 1.3 inch (W x H x D) 134 mm x 59 mm x 32 mm (L x B x H) Approx. 1.1 lb (0.5 kg, incl. mounting bracket)

9.2 **Materials**

Enclosure C8, P8, C12, P12:	Aluminum, coated
Coating:	PP texture paint, 2-component, silicon free RAL 5007 (blue) fine structure RAL 7001 (grey) nano structure
External table power supply:	Plastic AF-303

9.3 **Environmental conditions**

Air circulation:	Unobstructed air circulation at the back must be maintained
Ambient temperature for operation:	+32° to +113° F (0° to +45° C, depending on configuration)
Ambient temperature for storage and transport:	-4° to +140° F (-20° to +60°C)
Humidity:	5 - 90% relative humidity, non-condensing

9.4 **Power supply requirements for N7A mainboards**

Rated input voltage:	+12 V \pm 5%
Input current:	typ. 2.0 A at 12 V (depending on configuration and display)
Power consumption while operation:	approx. 24 W typical, max. 70W
Standby power consumption:	< 1 W

9.5 **Power supply requirements for N7B mainboards**

Rated input voltage:	+12 V \pm 5%
Input current:	typ. 2.5 A at 12 V (depending on configuration and display)
Power consumption while operation:	approx. 30 W typical, max. 70W
Standby power consumption:	< 1 W

9.6 External power supplies

Input voltage:	100 - 240 V ~
Input frequency:	50 - 60 Hz
Rated current:	max. 1.5 A
Output voltage:	+12 V stabilized
Output current:	5.5A
Marks of conformity:	UL, CE, FCC

9.7 Display in C8 and P8 enclosure (8.4"-SVGA)

Size and type	8.4 Zoll / TFT
Resolution	SVGA 800 x 600
Brightness	350 cd/m ²
Horizontal viewing angle	-50° / +50°
Vertical viewing angle	-55° / +35°
Contrast ratio	250:1
Maximum color depth	18 Bit

9.8 Display type 'S' in C12 and P12 enclosure (12.1"-SVGA)

Size and type	12.1 Zoll / TFT
Resolution	SVGA 800 x 600
Brightness	350 cd/m ²
Horizontal viewing angle	-65° / +65°
Vertical viewing angle	-75° / +45°
Contrast ratio	500:1
Maximum color depth	24 Bit

9.9 Display type 'X' in C12 and P12 enclosure (12.1"-XGA)

Size and type	12.1 Zoll / TFT
Resolution	XGA 1024 x 768
Brightness	320 cd/m ²
Horizontal viewing angle	-65° / +65°
Vertical viewing angle	-75° / +45°
Contrast ratio	550:1
Maximum color depth	18 Bit

9.10 Touch

Procedure	Resistive analog touch
Quality	Up to 1 million touches at one location
Surface	UV-resistant, acrylate-coated polyester foil (PET) on glass carrier (hard coated polyester)

9.11 Mainboard (type N7A and N7B)

The useable mainboard type depends on choosen enclosure type.

Mainboard type **N7A is useable in enclosure types C8, P8, C12 and P12.**

Mainboard type **N7B is only useable in enclosure types C12 and P12.**

Processor (CPU) Mainboard type N7A	Intel Celeron with 400 MHz 100 MHz FSB 256 kB L2-Cache
Processor (CPU) Mainboard type N7B	Intel Pentium III with 933 MHz 133 MHz FSB 512 kB L2-Cache
Memory	max. 512 MB DRAM (SO-DIMM Socket)
Graphics controller	Intel 82815, max. 32MB Video-RAM
Network	Intel 82551, 10 / 100 Mbit
Hard drive controller	PCI EIDE
External interfaces	2 x RS232 (COM1, COM2) 2 x USB 1.1 2 x USB 2.0 (only in C12 and P12 enclosure) 1 x Netzwerk (Ethernet, RJ45), 10 / 100 Mbit 1 x VGA connector for external monitor 1 x combined PS/2 connector for keyboard (direct connection) and mouse (mouse can only be operated individually or together with the keyboard using the optional Y switch) External drives (floppy, CD, DVD) via USB
Microprocessor-controlled system management	Temperature monitoring Voltage monitoring Power management Touchcontroller Parameters setup via setup file

9.12 Internal expansion slots in C8 and P8 enclosure

Expansion slots	1 x Mini-PCI slot type III 1 x Compact-Flash slot type I 1 x PC/104+ without ISA (with optional adapter) 1 x Low profile PCI slot (MD1 / 122mm length / 3.3V signaling voltage) (with optional backplane)
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9.13 Internal expansion slots in C12 and P12 enclosure

Expansion slots	1 x Mini-PCI slot type III 1 x Compact-Flash slot type I 1 x Standard PCI slot (5.0V signaling voltage)
Additional extern	2 x USB 2.0

9.14 Additional cards for Mini PCI slot



The Mini PCI slot complies with Mini PCI specification Rev. 1.0
It is intended for use with type III cards.

Max. current consumption for 3.3 V:	600 mA
Max. current consumption for 5 V:	100 mA



The Mini PCI card should not exceed a maximum total power consumption of 2.0 W.
Observe maximum permissible currents at all times.

9.15 Additional cards for Low Profile PCI slot (only C8 or P8 enclosure)

A Low Profile PCI card slot is available via an optional backplane.
The card length is limited to a maximum of 20 mm (MD1).



The Low Profile PCI slots comply to PCI specification Rev. 2.1
5V and universal PCI cards can be used.

Max. current consumption for 3.3 V:	1500 mA
Max. current consumption for 5 V:	1000 mA
Max. current consumption for 12 V:	500 mA
Max. current consumption for -12 V:	75 mA



The Low Profile PCI card should not exceed a maximum total power consumption of 10 W.
Observe maximum permissible currents at all times. Additional cards increase the interior temperature and lower the maximum permissible ambient temperature.

9.16 Additional cards for PCI slot (only C12 or P12 enclosure)



The PCI slots comply to PCI specification Rev. 2.1
5V and universal PCI cards can be used.

Max. current consumption for 3.3 V:	1500 mA
Max. current consumption for 5 V:	1000 mA
Max. current consumption for 12 V:	500 mA
Max. current consumption for -12 V:	100 mA



The PCI card should not exceed a max. total power consumption of 10 W.
Observe maximum permissible currents at all times. Additional cards increase the interior temperature and lower the max. permissible ambient temperature.

9.17 Fuses

The internal power supply fuse with characteristic **5A slow-blow** is located in socket "F20" on mainboard.

All other fuses on the mainboard are self-restoring and usually do not have to be replaced.



Fuses should only be replaced by authorized personnel. The above technical data regarding fuses should be maintained at all times.

Please contact our service department if you have any questions regarding fuses or replacement fuses.

10 Declarations of conformity

10.1 CE conformity

All noax Industrial PCs mentioned in this User Manual complies with the requirements set out in the European Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility 89/336/EEC and the Council Directive relating to Low Voltage 73/23/EEC.

10.2 FCC conformity

Allnoax Industrial PCs mentioned in this User Manual complies with Part 15 of FCC Rules for Class A Devices.

Additional information regarding to FCC Rules:

- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.
- These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
- This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
- Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

10.3 Declarations of conformity as download

All actual declarations of conformity can be downloaded from the website **www.noax.com**, section **“Service & Support” – “Certificates”**

There you also can find additional declarations of conformity for some Industrial PC e.g. GOST.

If you can't download the declarations of conformity please contact our hotline.

11 Your notes

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