

User Manual

Industrial PCs Boardversion N6

BDA-ALL-N6-US-1.0

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noax[®]
Technologies

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This manual describes all variants of the Industrial PC with the mainboard N6A / –B und –C.

i Old device designations are in parentheses.

Enclosure types



Compact enclosure 12 inch C12 (K12)



Compact enclosure 15 inch C15



Stainless steel enclosure 12 inch S12

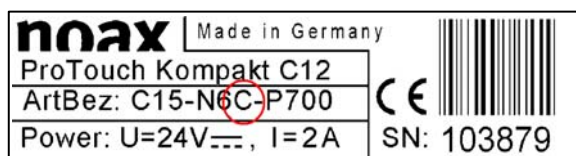


Stainless steel enclosure 15 inch S15 (E15)



Panel mount enclosure 12 und 15 inch P12, P15 (FE12, FE15)

Mainboard variants



The specifications of your N6 (P6) mainboard are listed on the type plate (A, B or C: For differences see the technical data in chapter 7)

i Please find more information on our web page at www.noax.com.

1 **Safety**

To avoid injuries or damage, it is imperative that you read and follow the user and safety instructions.

The manufacturer/supplier will not be liable for any damage caused by not observing these instructions.

1.1 **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.



Mandatory instructions are indicated by



Particularly important instructions are also in bold.



Numerical lists and conditions are indicated by a black dot.



Operating instructions which have to be performed by the operator are indicated with a black arrow.

1.2 **Intended Use**

Your Industrial PC has been built to the latest technology and safety regulations.



Please use the Industrial PC only when it is in a good, undamaged condition! Any problems and/or malfunctions which could reduce safety must be corrected immediately (for example, defective power cord or enclosure)! Our professional service will take care of any repair.

1.3 Safety instructions



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

This manual belongs with the Industrial PC and must remain with it.

Follow accident prevention and safety rules!

Do not allow liquids or harmful vapors (e.g. from cleaning agents) to get into the non–NEMA protected electronics area.



Only allow authorized professionals to repair the ProTouch. Unprofessional work on electric and electronic devices may cause electrical shocks.



These PC's contain electronic devices with highly integrated components. These electronic components highly sensitive to surges and therefore also to the discharge of static electricity. To avoid damage, static electricity must be removed from the body before touching electronic components. For this purpose, touch a metal part on the ProTouch which is not insulated such as the connector panel or the metal enclosure.

Power units Do not open the power supply at any time! There are no maintainable components inside.

Mount the power supply only with the mounting bracket provided or the mounting holes (on no account on the cord). Do not cover the power supply or mount it in a too small enclosure, otherwise there is danger of overheating. For safety reasons, the power unit must be mounted in a way that it can be disconnected from the outlet at all times.

The power unit may only be connected to an outlet with a ground wire. Use the power cord provided, as it complies with all latest safety regulations.

Operate the Industrial PC only with the power supply provided or use an optional connection cord with an integrated fuse (can be provided as an option).

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

External devices External devices (e.g. maintenance floppies, scanners...) may only be connected or disconnected to/from the Industrial PC is shut off, otherwise the Industrial PC electronics or the external device could become damaged! Wait at least five seconds after shutting off the Industrial PC before connecting an external device (with the exception of connecting Hot Plug devices to USB and Firewire interfaces).

Please take care, that the connecting cables to the Industrial PC, are not too short or stretched.

1.3.1 Upgrades and maintenance work to the Industrial PC



Before opening the device to upgrade or service it, the Industrial PC must be completely disconnected from the power supply! For this purpose, unplug the cord for the power supply from the "Power" connector of the Industrial PC. Simply turning off is not sufficient!

The Industrial PC may only be opened by authorized professionals with fundamental PC knowledge and not by a layperson. Should upgrades or maintenance work be improperly carried out, the warranty is no longer valid. Our service is recommended.

Faulty and damaged electrical equipment and parts must always be replaced by expert electricians only!



Please note after opening the Industrial PC that some components can become very hot during operation (e.g. memory or hard drive). Allow these components to cool off before touching them.

Batteries

Please use only batteries of the same type or those of a similar type recommended by the manufacturer. Please dispose of the batteries according to the manufacturer's directions.



There is danger of explosion if the CMOS battery is not properly inserted. Insert the battery with the "+" side facing upwards (the "+" sign must be legible after having been inserted).

1.3.2 Touch display

To avoid damage and malfunction, do not use pointed, sharp or harsh objects to touch the screen! Optional protective film is available.

Do not beat or use extreme pressure to touch the display, as this could damage or destroy it (resulting in broken glass, for example).

Do not place the Industrial PC face down on a hard surface. If necessary, place a soft cloth or a piece of foam underneath the unit and make sure that no objects (e.g. screws) can damage the display.

Only use soft cloths to clean the touch screen. Avoid scratches.

Please also observe the instructions in the chapter 5 "Servicing and cleaning the Industrial PC".

2 Power supplies

2.1 External power supply

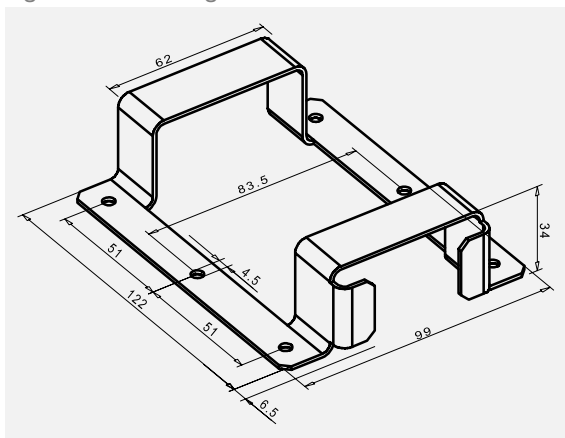
Fig. 15 External power supply unit



The external table power unit consists of the following components:

- Power cord
- Power unit with connecting cord to the device
- Installation frame for attaching the device

Fig. 16 Mounting bracket



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.

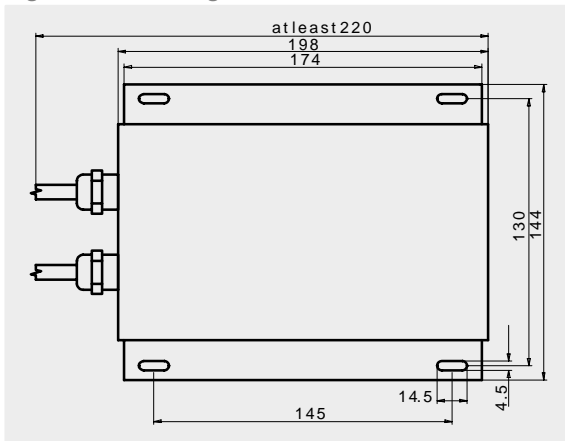
2.2 External power supply NEMA4 (IP65)

Fig. 17 External power supply NEMA4



The external power supply with a degree of protection NEMA4 can be mounted directly on the wall, for example, using the mounting holes.

Fig. 18 Mounting holes



To mount the external power pack, transfer the distances between the drill holes shown in the drawing to the surface provided for attachment.

3 Installation and setup

3.1 Installation site

The Industrial PC is designed for challenging (harsh) environments.

However, please following the installation regulations:

- Avoid exposing the display to sun.
- Do not install the Industrial PC to be directly influenced by heat sources. Please see that there is sufficient circulation of the rear panel, or rather, of the cool fins at the rear panel.
- Leave a minimum of 0.6 inch (15 mm) space to ensure sufficient air circulation.

ⓘ **The device will switch off on its own if the temperature is out of the operating range.**

- Do not mount the Industrial PC on heavily vibrating surfaces. If this cannot be avoided, attach the device to shock and vibration absorbers.
- When the ProTouch is used on fork lifts or similar vehicles, **it is imperative that you take additional measures to absorb shocks and reduce vibrations** (available as an option: "Modification for mobile use").

Special mounting brackets are available for mobile applications.

ⓘ **You can find more information about installation and mounting brackets on our web page www.noax.com.**

3.2 Mounting C12 and C15 kompakt enclosures

Fig. 19 T–bar and screws



The Industrial PC Compact is attached using the rear panel of the cooling element, which has two guide bars with a T–slot for groove stones.

The groove stones (DIN 508/ M5x6) and screws (M5x10) with washers are included in delivery.

**Factory–
made
groove stones
Device holders (optional)**

Two stoppers are factory installed at the top of both T–bar slots. The stoppers prevent the Industrial PC T–bars from sliding through the t–bar slots and align the Industrial PC. This makes the attachment easier.

TA variety of mounting brackets is available for the Industrial PC .

- ▶ Screw the T–bars (DIN 508 / M5x6) directly onto the wall (e.g. door of the control cabinet) and slide the Industrial PC into them.
- ▶ Use the T–bars to attach the optional mounting brackets



Caution danger of injury:
For safety reasons, do not remove the firmly placed stoppers from the T–Slots. Make sure that the T–bars and stoppers are securely tightened!



Please find more information about the mounting brackets in our web page www.noax.com.

Fig. 20 Rear panel C12

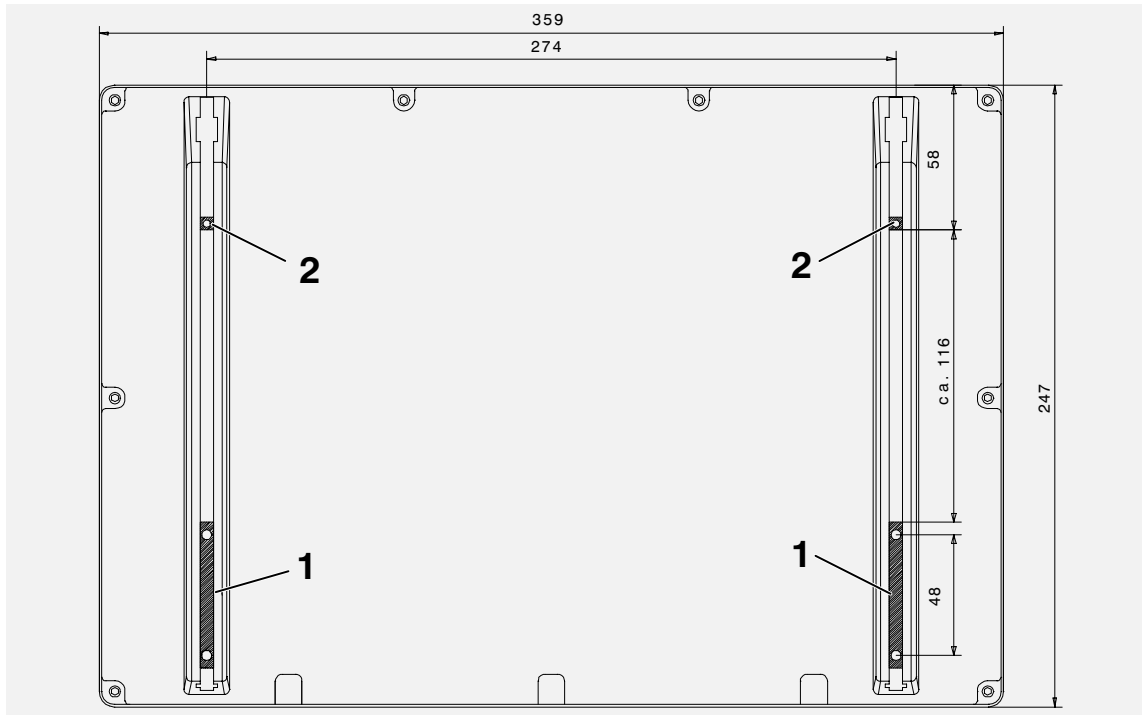
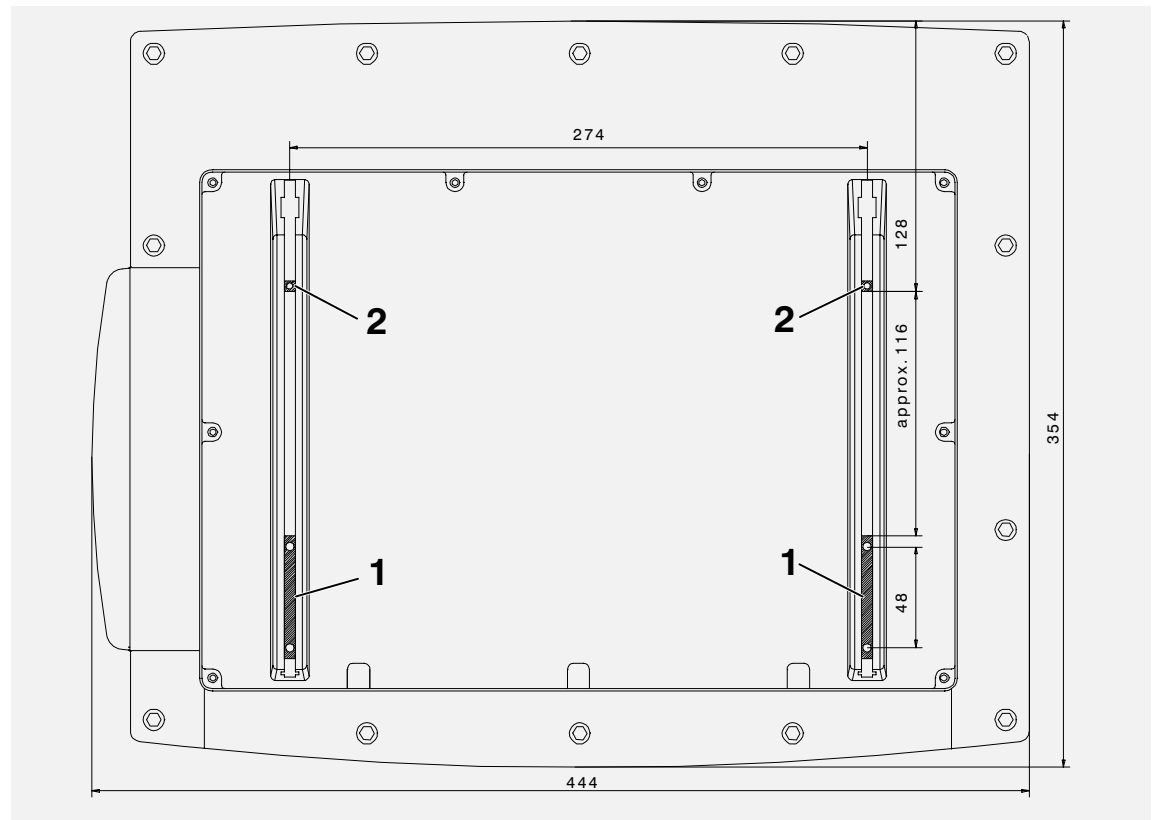


Fig. 21 Rear panel C15



- 1 – T-bar
- 2 – Stopper

To mount the Industrial PC. to a surface, follow the direction in the drawing.

3.3 Mounting the stainless steel S12 and S15

Fig. 22 Rear panel S12

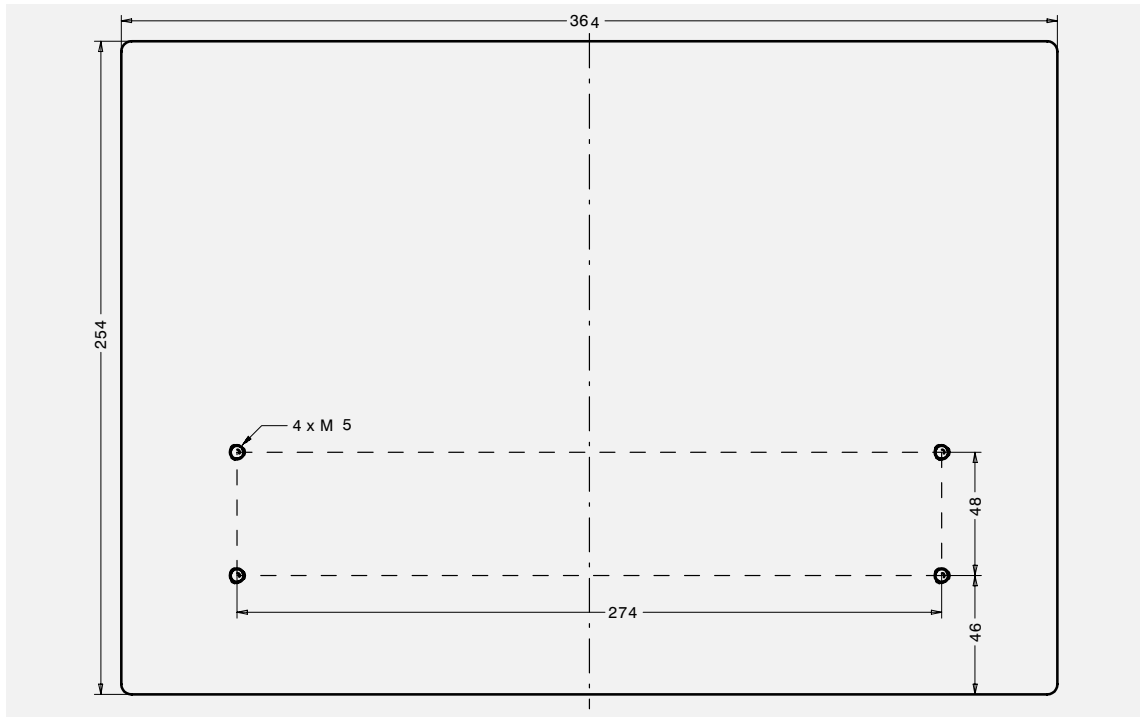
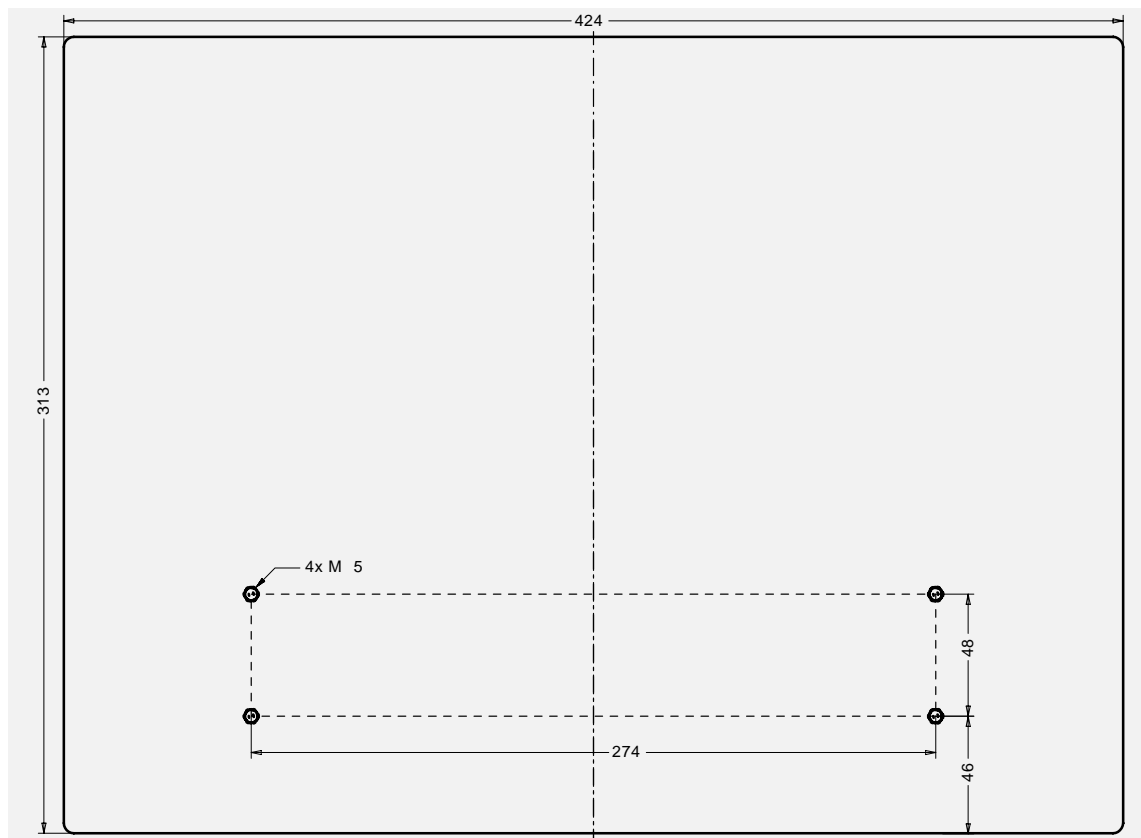


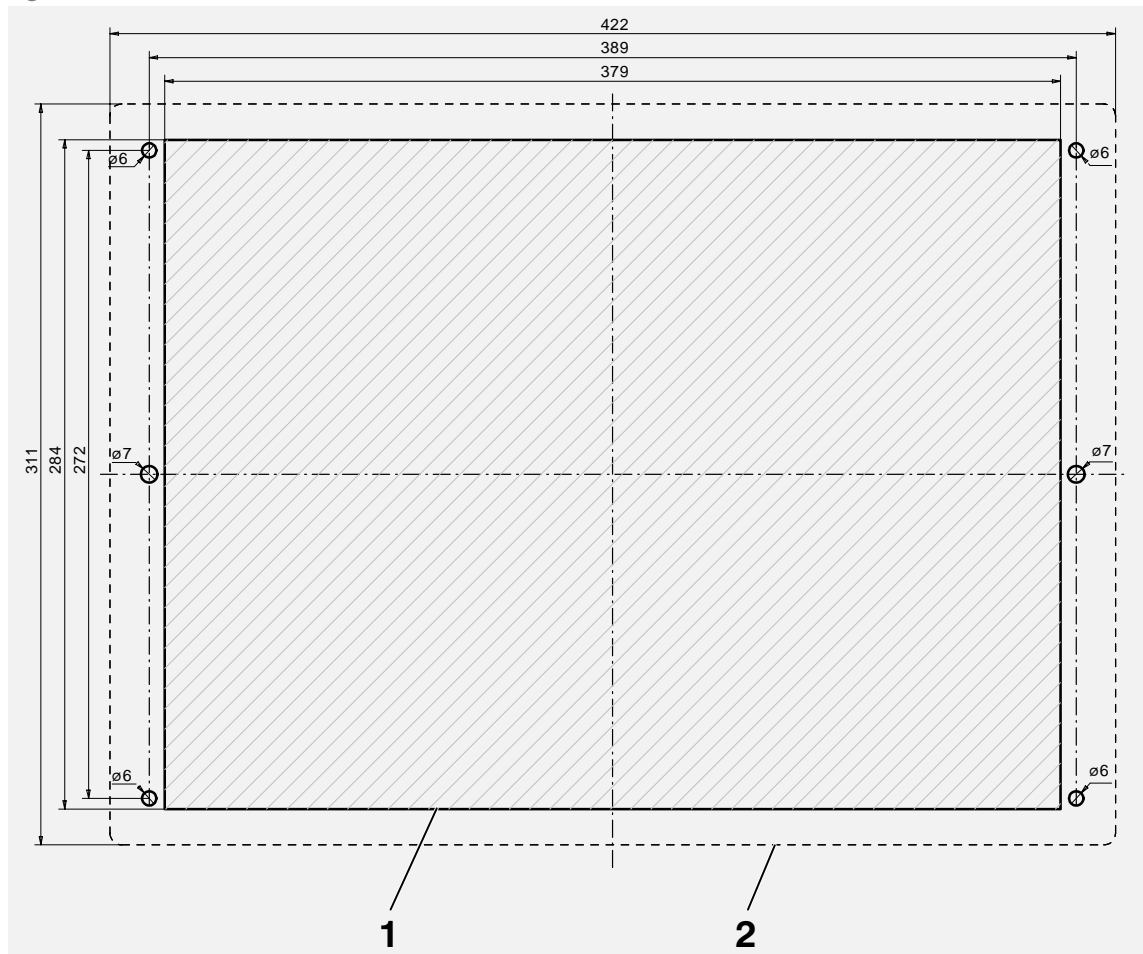
Fig. 23 Rear panel S15



To mount the Industrial PC. to a surface, follow the direction in the drawing.

3.4 Installation of the Panel Mount P12 and P15

Fig. 24 Installation cut-out for P12 and P15



- 1 – Cut-out for installation
- 2 – Dimensions of the front panel of the Industrial PC

Fig. 25 Depth of the Panel Mount P12

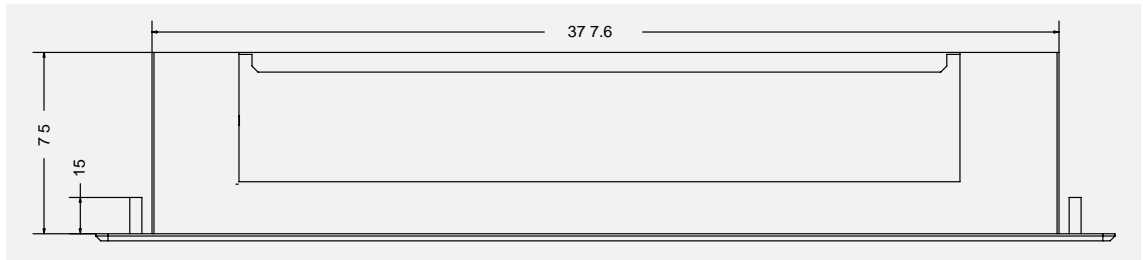
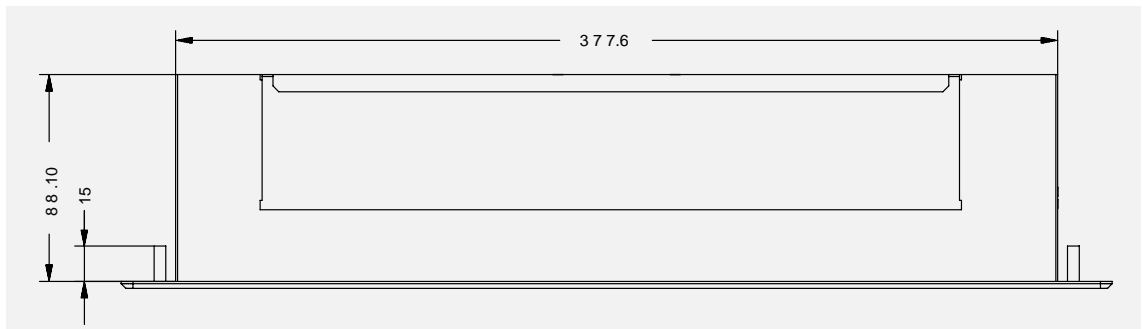


Fig. 26 Depth of the Panel Mount P15



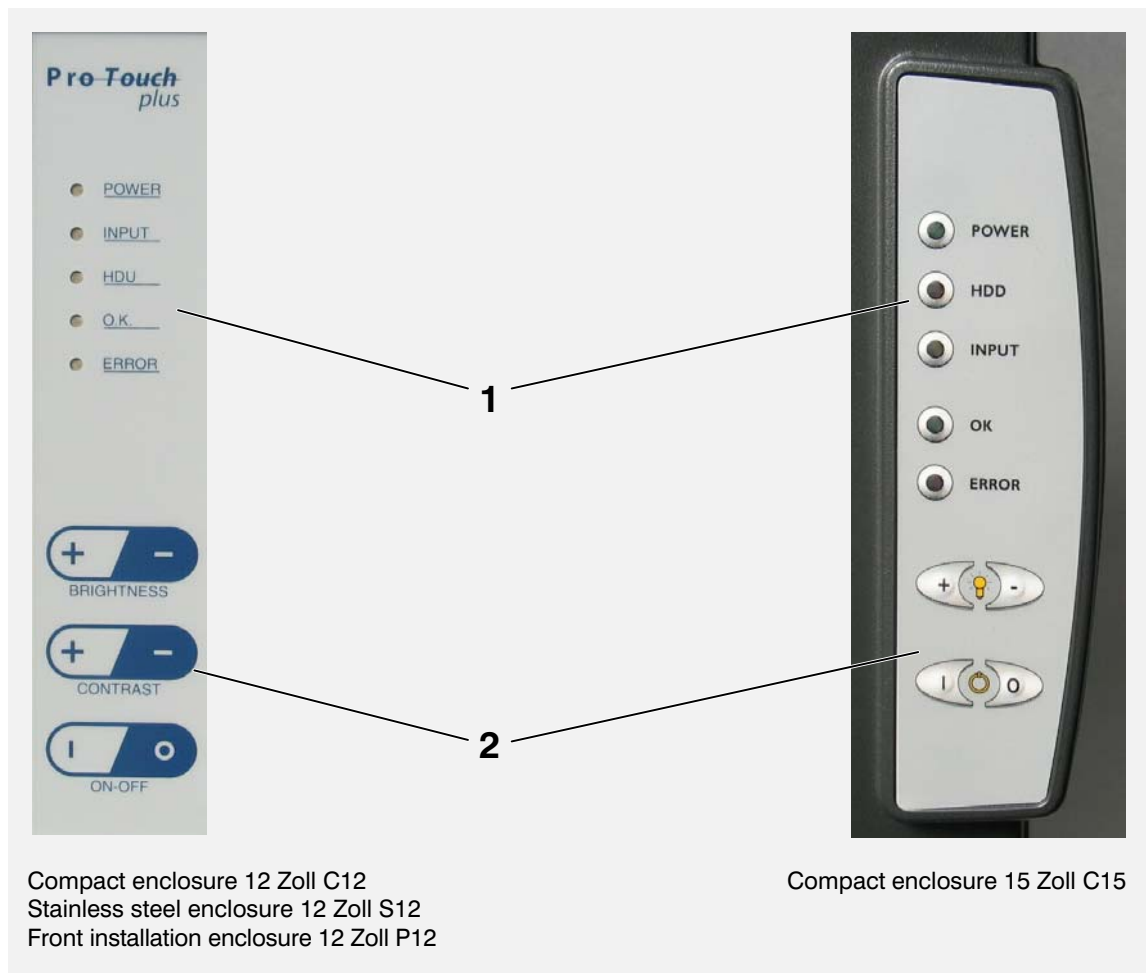
To ensure sufficient air circulation, you must leave a minimum of 0.6 inch (15 mm) extra space.

4 Operation

4.1 **Operating and indicator devices**

All operating and indicator devices are located on the front of the Industrial PC. There are LED's in the upper area and keys in the lower area.

Fig. 27 Operating and indicator devices



- 1 – Display area
- 2 – Key area


i The stainless steel Industrial PC. S15 and the Panel Mount ProTouch P15 do not have any operating or indicator devices.

4.1.1 **General key function information**

The light-emitting diode INPUT will light up, or rather, flash as soon as a key has been pressed. Press the keys as close to the middle of the symbol as possible.

4.1.2 Display area

The functions of the operating and display elements can be modified in the software's setup. The following overview describes the functions in the factory settings.

Light-emitting diode	Function
POWER	Lights up as soon as the Industrial PC is turned on.
INPUT	Lights up at valid entry
HDD	Lights up when the hard drive is accessed.
OK	Lights up after the Industrial PC has successfully completed the internal function test and all functions are in order.
ERROR	Lights up when a problem or an error occurs at the Industrial PC.
 See troubleshooting chapter 6	

4.1.3 Key area

Key	Function
BRIGHTNESS +	Increase brightness
–	Decrease brightness
CONTRAST +	Not used!
–	Not used!
ON-OFF I	Turn on the Industrial PC or CFL back light, trigger the hard reset
O	Shut off the Industrial PC or CFL back light.

4.2 Operation



The functions of the operating and display elements can be restricted or deactivated in the software's setup. The following overview describes the functions in the standard settings. This software can be downloaded on the Internet.

Function	Standard settings
Turn on the Industrial PC	▶ Press the ON (I) for at least one second
Turn off the Industrial PC	▶ Press OFF (O) for at least 5 seconds
Set the display's brightness	▶ To change the brightness by one level, tap the [+] or [–] key briefly ▶ To continuously change the brightness, keep the [+] or [–] key pressed down
Trigger the hard reset	▶ Press the ON (I) key for more than 5 seconds

4.2.1 CFL back light

The integrated CFL back light will dim to an adjustable, reduced brightness 3 minutes after the last time a key has been pressed or the display has been touched.

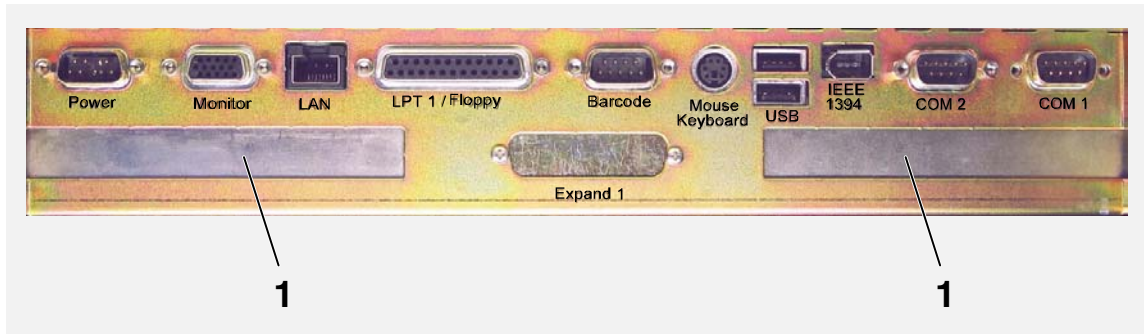
Function	Standard settings
Dim	▶ 3 minutes after a key has been pressed or the screen has been touched
Reactivate	▶ Press any key on the external PS2 keyboard (only PS2, not USB) ▶ Press the ON key ▶ Press the touch surface ▶ Moving a PS/2 mouse



You can reactivate the back light by briefly pressing the key ON (I).

4.3 Connector area

Fig. 28 Drawing of the connector pane



1 – Opening for an ISA / PCI combi slot

Optional labeling of the serial interface COM1 / COM2 :

RS232P5	RS232 interface with 5 V voltage output (5 to Pin 4)
RS232P12	RS232 interface with 12 V voltage output (12 to Pin 4)
RS422DP	RS422DP interface with 5 V and 12 V voltage output (Dual power 12 V to Pin 4 and 5 V to Pin 9)
RS485DP	RS485DP interface with 5 V and 12 V voltage output (Dual power 12 V to Pin 4 and 5 V to Pin 9)
TTY20mA	TTY 20 mA interface (Current loop)



Plug or unplug the devices only when the power is off.

Exception: USB and IEEE 1394 (Firewire)



Please find more information about optional serial interface modules on our web page www.noax.com.

5 Servicing and cleaning of the Industrial PC

- ▶ Turn off the device and disconnect it from the power supply.
- ▶ Use typical commercial plastic cleaners and a soft, lint-free cloth
- ▶ Do not put the cleaning agent directly on the Industrial PC, rather first on the cloth
- ▶ If at all possible, clean when damp (not wet, with the exception of IP65 devices) and do not press the cleaning agent under the touch seals
- ▶ Clean the surface and the display window without applying pressure
- ▶ Remove the cleaning agent completely from the device using a clean cloth

For further protection from mechanical wear, we offer a special protective film that can be changed after being used.



Do not on any account clean the display window with cleaning agents which contain abrasives. The surface will become scratched and matt.

You can find more information on the Internet at www.noax.com.

6 Troubleshooting and repair

In this chapter you will find necessary information in case of problems with the Industrial PC.

i **In case one of the following problems occurs, the device will shut off automatically**

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

6.1 **N6 error codes**

If an error occurs, the integrated MCU will display an error code on the display section LED's, which shows more specific information about the type of error. As soon as the "Error" LED permanently lights up, the LED's "OK", "INPUT" and "POWER" no longer have their normal functions but display an error code. Please make a note of this error code and notify the hotline:

Tel.: +49(0)80 92–8536–33

Fax +49(0)80 92–8536–55

eMail: hotline@noax.com

i You can find more information about this error code on the noax web page in the service section under FAQ..

6.2 **Handling repairs**

Please follow these guidelines for fast and smooth repair handling.

- Please use our service cover letter, which is available on the web page at **www.noax.com** as a PDF or Word file. Fill out the form as completely as possible and enclose it with the device being returned.
- Please make a backup of your data before sending your ProTouch. We assume no liability for accidental loss of your data.
- Should your system be password protected, please either delete the password or let us know what it is. Otherwise we will have to reset the password.
- Please see that the Industrial PC. is securely packages (preferably in the original noax carton). We assume no liability for damage incurred during transportation.
- We recommend sending the package by UPS Standard. In case of warranty, we will not pay for additional services such as express services, etc. Please affix the appropriate paperwork. During warranty we will pay the UPS Standard charges.

- In urgent cases, we can supply rental equipment for a nominal fee. Please contact the hotline or our representative.

① Please find more information at www.noax.com.

6.3 **FAQ – frequently asked questions**

Please look for the FAQ section on our web page in the **Service** section.

7 **Technical data**

7.1 **Weights**

Industrial PC – Compact C12:	approx. 12.32 lbs / 5.6 kg (depending on integrated options)
Industrial PC – Compact C15:	approx. 21.34 lbs / 9.7 kg (depending on integrated options)
Industrial PC – Stainless steel S12:	approx. 13.20 lbs / 6.0 kg (depending on integrated options)
Industrial PC – Stainless steel S15:	approx. 18.70 lbs / 8.5 kg (depending on integrated options)
Industrial PC – Panel mount P12:	approx. 12.75 lbs / 5.8 kg
Industrial PC – Panel mount P15:	approx. 15.18 lbs / 6.9 kg
External table power unit including installation frame:	1.10 lbs / 0.5 kg
External power unit NEMA (IP65) (optional):	2.64 lbs / 1.2 kg

7.2 **Materials**

Enclosure C12:	Noryl, fiber glass reinforced (impact resistant)
Enclosure C15:	Cycoloy C1100 HF
Rear panel C12, C15:	Powder-coated aluminum casting
Enclosure and rear panel S12, S15:	Stainless steel V2A (1.4301)
Enclosure and rear panel P12, P15:	Stainless steel V2A (1.4301)
Touch front:	UV resistant, acrylat-coated polyester film (PET) on a glass base
External power pack	Plastic AF-303
External power unit NEMA (IP65) (optional):	Aluminum coated

7.3 **Ambient conditions**


Air circulation:	Sufficient circulation of the rear panel must be ensured.
Ambient temperature during operation	32F to 113F / 0 to +45° C (depending on the integrated options)
Ambient temperature for storage and transportation	-4F to 140F / -20 to +60° C
Humidity:	5 – 90% relative humidity not condensing

7.4 **External power units**

Input voltage	100 – 240 VAC
Input frequency:	50 – 60 Hz
Rated current:	max. 1.5 A
Output voltage:	24 V regulated
Output current:	ext. power unit 3 A, NEMA (IP65) power unit 3.3 A
Approvals:	UL, GS, CE, FCC

7.5 Mainboard

Version A	Equipment
	Mobile Celeron with 400 MHz
	Temperature monitoring of the CPU
	maximum 512 MB DRAM (SO-DIMM base)
	Real-time clock
	CMOS-RAM
	VGA controller C&T69030 with 4MB SD-RAM video memory
	Simultaneous mode TFT display and monitor, external VGA connection
Version B	Equipment
Same as version A, however:	Mobile Pentium with 700 MHz
Version C	Equipment
Same as version B and additionally:	Compact flash slot
	PC card slot
	Sound
	Firewire IEEE 1349

 For which board is in your Industrial PC see page 4.

7.6 Technical data IPC

Rated input voltage	24 V
Maximum input voltage:	18 – 32 V
Input current:	type. 1.5 A at 24 V (depends on the stage of completion)
Power consumption during operation	approx. 36 W
Standby power consumption:	approx. 1 W

7.7 Additional cards in the ISA/PCI slot

Two combi slots are available for ISA / or PCI cards. You can insert cards with a maximum length of 7.87 inch (200 mm).

Maximum power consumption at 5 V:	1.5 A (per card)
Maximum power consumption at 12 V:	1.0 A (per card)



Both cards may not exceed the maximum power consumption of 20 W! Please observe the maximum currents at all times! Cards installed into the two combi slots raise the internal temperature and lower the maximum specified ambient temperature!

7.8 Fuses

F20 5A slow—(socket on the mainboard)

All other fuses on the mainboard are self—healing and as a rule must not be replaced.



Fuses may only be changed by authorized professionals. The above—mentioned technical data for fuses must be observed at all times.

For further questions, please contact our service personnel

8 Declaration of conformity



This declaration of conformity applies to the following designated products:

Type of device: Industrial PC

Valid for the following types:

- 12" Compact C12–N6x–xxxx (P6 / K–xxxxx–12TSI)
- 15" Compact C15–N6x–xxxx (P6 / K–xxxxx–15TX)
- 12" Stainless steel S12–N6x–xxxx (P6 / E1–xxxxx–12TSI)
- 15" Stainless steel S15–N6x–xxxx (P6 / E–xxxxx–15TX)
- 12" Panel mount P12–N6x–xxxx (P6 / FE–xxxxx–12TSI)
- 15" Panel mount P15–N6x–xxxx (P6 / FE–xxxxx–15TSI)

We confirm that the products comply with the basic protection requirements of the electromagnetic compatibility (89/336/EEC), modified by 91/263/EEC, 92/31/EEC, 93/68/EEC and 93/97/EEC and the Low Voltage Directive 73/23/EEC, modified by 93/68/EEC, stated in the Council Directive of adjustment of the laws of the Member States

This declaration is provided by:

noax Technologies AG
Anzinger Straße 5
D–85560 Ebersberg

Each test has been performed by an accredited testing lab.

The following standards regarding electromagnetic compatibility and the low voltage directive apply.

DIN EN 55022: 1998–04 Class A

DIN EN 61000–6–2: 2000–03

(DIN EN 61000–4–2: 2001–12, DIN EN 61000–4–3: 2001–12, DIN V ENV 50204: 1996–06;
DIN EN 61000–4–4: 2002–06, DIN EN 61000–4–5: 2001–12, DIN EN 61000–4–6: 2001–12,
DIN EN 61000–4–8: 2001–12, DIN EN 61000–4–11: 2001–12)

DIN EN 61000–3–2: 2001–12

DIN EN 61000–3–3: 2002–05

DIN EN 60950: 2001–12

9 **Your notes**

www.noax.com

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