1 <u>Product information Heating</u>

⚠ **ATTENTION: Pay attention to the power supply for devices with N8 mainboard.**
In order to ensure the faultless function of the heater for devices with N8 mainboard, the power supply (contrary to operation without heater) must be kept in the range of 24 V to 30 V. An error message or very long heating times (more than 25 minutes) can occur in the range of 19 V to 24 V.

⚠ **Please also observe the instructions on the last page of this product information.**

1.1 Installation instructions

The <u>retrofitting</u> of the heater can **only** be performed by the Service Department of noax , as some important modifications to the MCU-firmware and the setup-parameters are necessary. Please contact our Hotline if you want to retrofit a heater.

1.2 Functional principle and possible settings

In order not to adversely affect the service life of temperature−critical components in the devices, these are preheated to a non−critical temperature by the installed heater before the PC-part is switched on.

In the case of a minimum exterior temperature of −4 °F (−20 °C), the PC-part can be switched on within a few minutes. The heater controller continuously monitors the temperature in the background of the critical components and heats these as required. The function of the components is thus ensured and premature ageing is prevented.

All necessary options for the heater regulation can be performed with the graphical "NSetup" tool (GUI-version, from Version 2.37b). The current version of the tool can be downloaded from the "Technical Downloads" area under "Service & Support" on our Web-site **www.noax.com** .

The following options can be configured:

Option	Effect
Heater activated (Default: off)	The heater functions are active if this option is activated
Heater-Autostart (Default: on)	If this option is activated, the first heating process starts as soon as the supply voltage at Industrial PC is present and the exterior temperature is more than the minimum starting temperature of the heater. (Exterior temperature > −4 °F / −20 °C)
Always perform autostart function (Default: off)	If the exterior temperature is less than the minimum starting temperature of the heater (−4 °F / −20 °C), the heater does not start automatically when the supply voltage is applied. If this parameter is set, the heater starts as soon as the minimum starting temperature is exceeded. (Exterior temperature > −4 °F / −20 °C)
Heater remains switched on after switching off the IPC (Default: off)	If this option is activated, the heater also remains activated after switching off the PC-part. Pay attention to the power consumption.
Allow switching off with special-function keys (Default: on)	If this option <u>and</u> the "heater remains active after switching off the IPC" option are active, the heater can be switched off by pressing and holding the "F"-key and the "On/Off"-key simultaneously for at least 6 seconds (factory setting). (see point 1.4)

⚠ **If your device is connected to a battery power supply, please pay attention to the setting of the "heater remains switched on after switching off the IPC" parameter.**
This parameter causes the heater to remain permanently active and thus also needs constant power. This can result in unintended discharge of the batteries.

1.3   Typical heating times until switching on of the PC-part

Device type	typical heating times until switching on of the PC-part
C8−N7 P8−N7	approx. 5 minutes for −4 °F (−20 °C) exterior temperature and rated voltage (12 V) approx. 4 minutes for +14 °F (−10 °C) exterior temperature and rated voltage (12 V)
C12S−N7 C12X−N7 P12S−N7 P12X−N7	approx. 8 minutes for −4 °F (−20 °C) exterior temperature and rated voltage (12 V) approx. 4 minutes for +14 °F (−10 °C) exterior temperature and rated voltage (12 V)
S12S−N8 S12X−N8	approx. 8 minutes for −4 °F (−20 °C) exterior temperature and rated voltage (24 V) approx. 4 minutes for +14° F (−10 °C) exterior temperature and rated voltage (24 V)

1.4   Displays and button combinations during the heater operation

1.4.1   Device types C8 / P8 / C12 / P12 with N7-main board

Fig. 1   Operating- and display elements C8 / P8 / C12 / P12
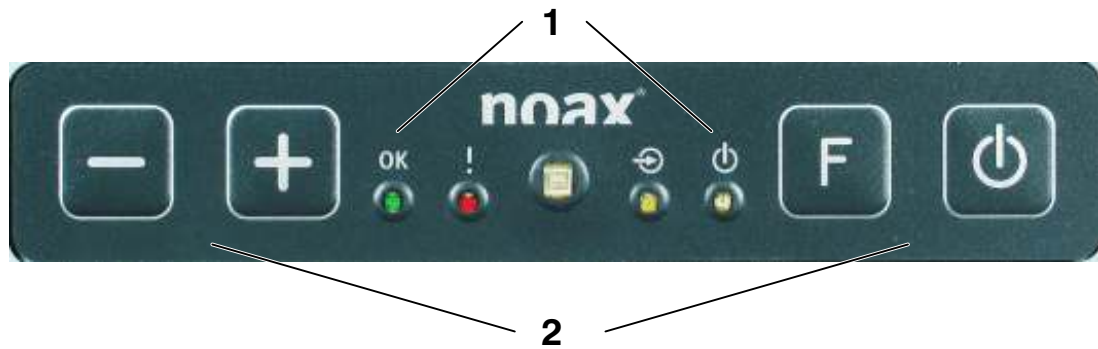
1 −   Display area (LEDs for OK, ERROR, INPUT, POWER)

2 −   Button area (Minus, Plus, Function and On/Off)

Function indicators in heater operation

Function indicator	Operating status
OK-LED (green) flashes briefly all other LEDs are off	The device is switched off. The heater could be switched on with the On/Off-button
OK-LED flashes normal, all other LEDs are off	The device is being heated
OK-LED is on, all other LEDs are off	The device is heated and ready to be switched on

Indicator displays in heater operation

Indicator display	Reason for the indicator display

LEDs from left to right:
  OK-LED   flashes
  ERROR-LED on
  INPUT-LED   flashes
  POWER-LED off
	The ambient temperature is too low
	for switching on the heater

LEDs from left to right:
  OK-LED   flashes
  ERROR-LED on
  INPUT-LED   flashes
  POWER-LED on
	The heater is not functioning correctly.
	The timeout has been exceeded.
	
	Please contact our Customer Service.

ⓘ **Please contact our Customer Service for all other indicator combinations where the ERROR-LED is permanently lit.**

1.4.2 Device type S12 with N8 mainboard

Fig. 2   Display- and operating elements S12

Function indicators in heater operation

Function indicator	Operating status
OK-LED (green) flashes briefly all other LEDs are off	The device is switched off. The heater could be switched on with the "On/Off "-key
OK-LED flashes normal, all other LEDs are off	The device is being heated
OK-LED is on, all other LEDs are off	The device is heated and ready to be switched on

Indicator displays in heater operation

Indicator display	Reason for the indicator display

LEDs from left to right:
  POWER-LED   off
  INPUT-LED   flashes
  HDU-LED   n.r.
  OK-LED   flashes
  ERROR-LED   off
	The ambient temperature is too low for switching on the heater
	
	Note:
	The status of the HDU-LED is not relevant here

LEDs from left to right:
  POWER-LED   on
  INPUT-LED   flashes
  HDU-LED   n.r.
  OK-LED   flashes
  ERROR-LED   on
	The heater is not functioning correctly. The timeout has been exceeded.
	
	Please contact our Customer Service.
	
	Note:
	The status of the HDU-LED is not relevant here

ⓘ   **Please contact our Customer Service for all other indicator combinations where the ERROR-LED is permanently on.**

1.4.3 Additional button functions in heater operation

If the options "heater remains switched on after switching off the IPC" and "enable switching off with button combination" are activated in the configuration, the heater can be switched off as follows **if the PC-part** is switched off:

▸ **Device types C8 / P8 / C12 / P12 with N7 mainboard**
The heater is switched off by simultaneous pressing **the Function-key ("F"-key) and the "On/Off"-key**.

▸ **Device types S12 with N8 mainboard**
The heater is switched off by pressing **the OFF-key** .

1.5　　　Important information

⚠ **ATTENTION: Pay attention to the power supply for devices with N8 mainboard.**
In order to ensure the faultless function of the heater for devices with N8 mainboard, the power supply (contrary to operation without heater) must be kept in the range of 24 V to 30 V. An error message or very long heating times (more than 25 minutes) can occur in the range of 19 V to 24 V.

⚠ **The power consumption of the heater at the rated voltage is approx. 20 W. For devices with N8 mainboard, the power consumption can be up to 30 W, depending on the supply voltage. The use of a mains adapter with 70 W output is therefore necessary (Article-No. 12181).**
If you do <u>not</u> use the noax mains adapter, ensure that your power supply can provide this increased output.

⚡ **If your device is connected to a battery power supply, please pay attention to the setting of the "heater remains switched on after switching off the IPC" parameter.**
This parameter causes the heater to remain permanently active and thus also needs constant power. This can result in unintended discharge of the batteries.

⚠ **When installing additional cards in a device with heating, ensure that the additional cards also comply with the extended lower temperature range of the device (−4 °F / −20 °C). Otherwise, there may be malfunctioning of the additional cards.**

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