PNI
PRACHT NETWORK INTERFACE

NRG 9014

Suitable for NRG1024

ATTENTION not suitable for retrofitting in DOUBLE CHARGER and PLUS models

INSTRUCTION MANUAL

Status: July 2023

CONTENT

NOTES ON THIS DOCUMENT

Before installing and using the PRACHT Network Interface **(PNI),** this document must be read and understood in full by the installer and each user. Please keep the manual for the entire service life of the module so that you can also access it later.

PRACHT reserves the right to change or correct the technical documentation without prior notice. Furthermore, PRACHT is not obliged in any respect to inform about possible changes of the technical documentation. The customer and/or installer is responsible for the suitability and intended use of the **PNI** in the application. Depending on the software version of the PNI, RFID MODULE and CONTROL PANEL, the functionalities and the web interface may differ from the illustrations in this manual.

SAFETY, INSTALLATION AND USAGE

The module may only be installed and put into operation for the first time by a trained electrician.

The electrical connection must be made in accordance with nationally applicable standards and other national and international regulations regarding accident prevention and personal protection, as well as fire protection.

Work on the wallbox may only be carried out when it is de-energised.

Modifications or conversions to the **PNI** are not permitted and will result in the loss of any guarantee and warranty claims against the manufacturer.

The module and all associated components may only be used for their intended purpose. The manufacturer accepts no liability for personal injury or damage to property resulting from improper use.

Defective or damaged modules must not be put into operation. In this case, contact your supplier.

FURTHER INSTRUCTIONS FOR USE

- For persons with a pacemaker or defibrillator, no statement can be made about the suitability of the use, maintenance or repair work of the charging station control, despite compliance with all European directives and standards on electromagnetic compatibility. Please contact the manufacturer of the defibrillator or pacemaker for further information.
- Improper use may result in serious injury or even death, and may destroy the vehicle or the charging station.

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DELIVERY SCOPE

Pos.	Quantity	Name
1	1	PRACHT Network Interface **PNI**
2	1	Instruction manual
3	2	Modbus cable with silicone hose 2x40cm/0,5mm² (pre-installed)
4		Connection cable 2x20cm/0,5mm² (pre-installed)
5	1	Cable tie
6	1	Patch cable Slim Cat.6A 0.25m
7	1	RJ45 socket / LSA insert
8	1	Jumper / contact attachment

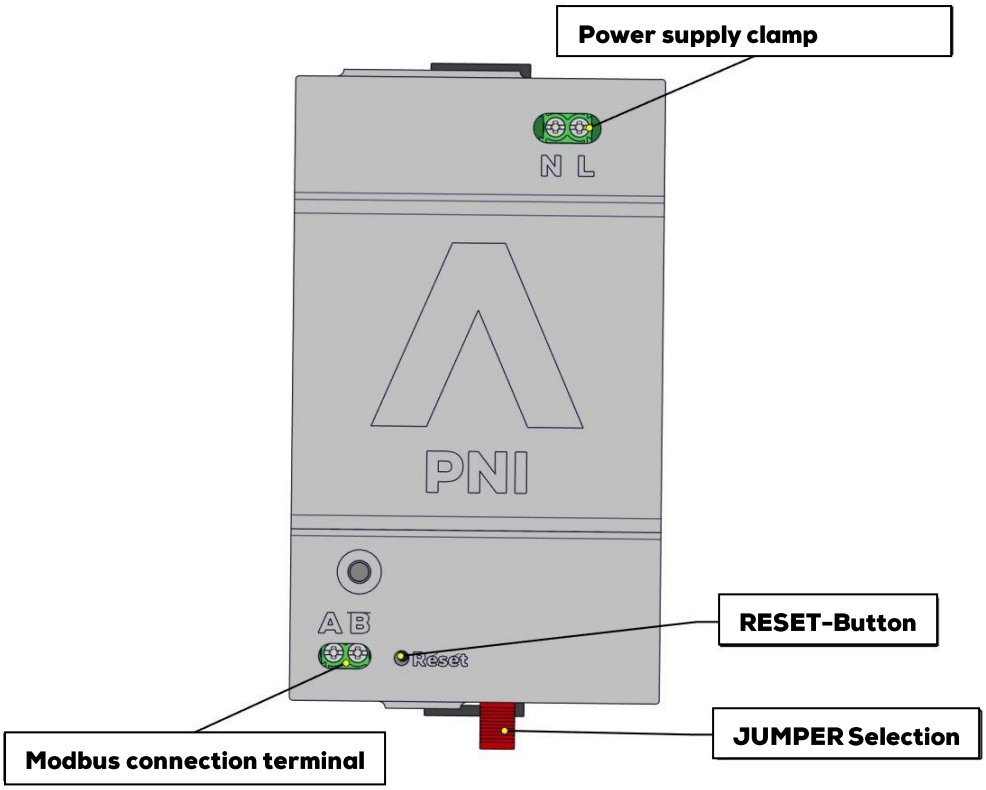

Figure 1 PRACHT NETWORK INTERFACE (PNI)

ELECTRICAL CONNECTION & ASSEMBLY (only if purchased as an accessory)

> ⚠ The wallbox must be disconnected from the power supply during installation work.
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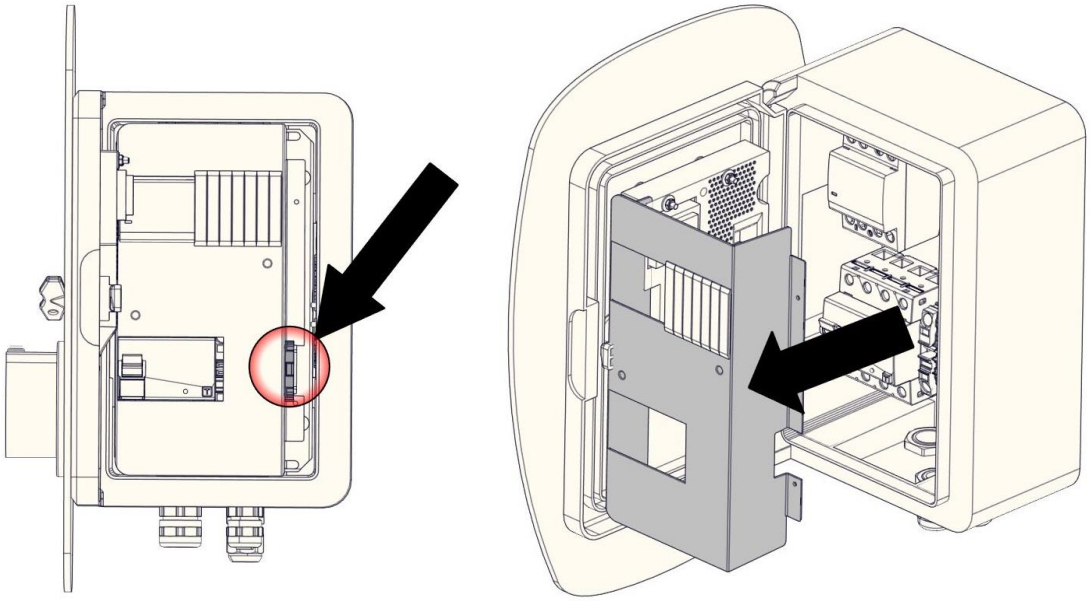
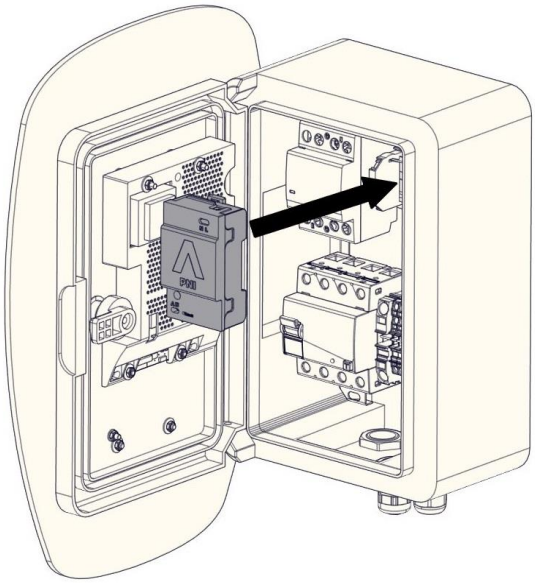
ASSEMBLY PNI

If you have purchased the **PNI** as an accessory, install it in your **ALPHA Wallbox** according to the following steps.

(1) Use a screwdriver to loosen the locking clip on the right side of the interior cover and remove the cover.



(1) Install the PNI on the free top-hat rail in the upper right corner.



The **PNI** has a slot for a so-called "jumper" (item 8 in the scope of delivery) at the lower edge of the housing (see figure 2).

If this is plugged in, the web interface is switched to a single charging point. Without the jumper, two charging points are displayed in the web interface. When installing the jumper, make sure that it is installed/not installed according to your ALPHA version.

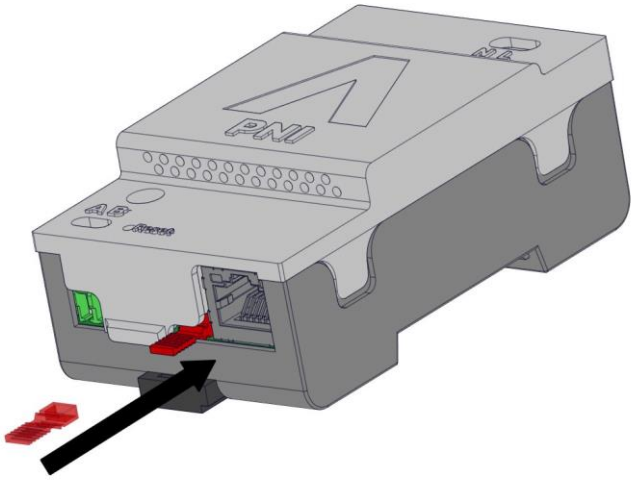
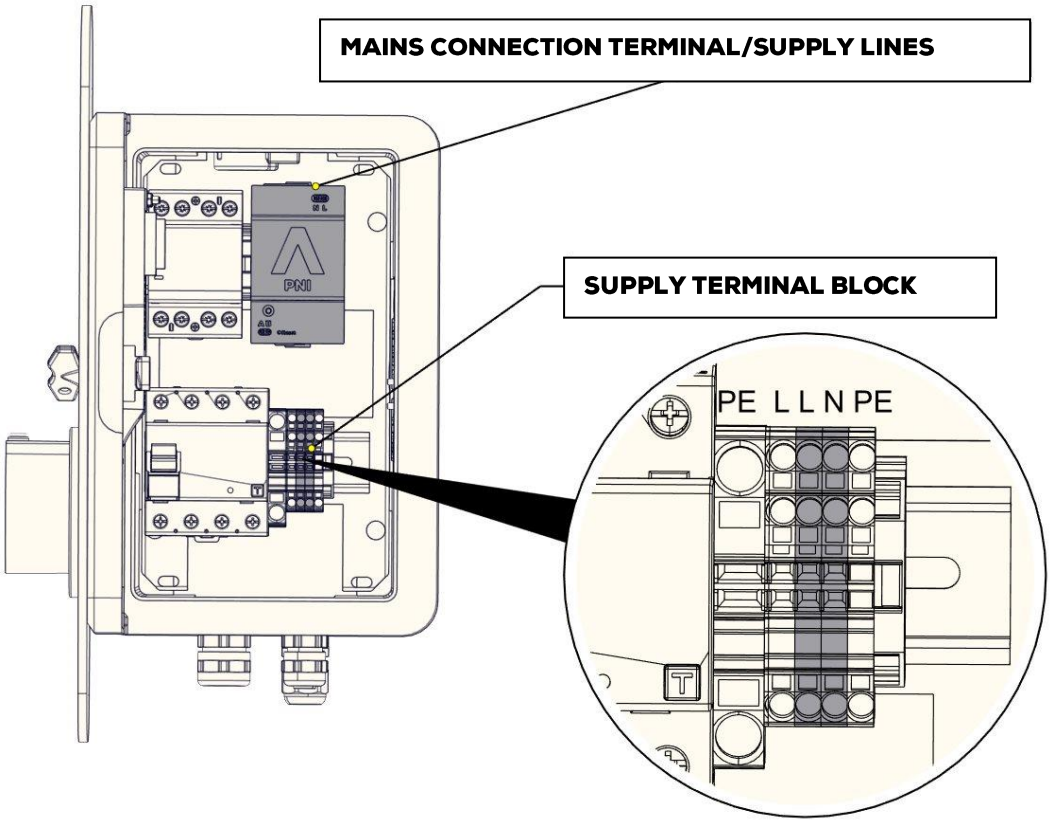


Figure 2 Installing the Jumper for ALPHA MONO models

ELECTRICAL CONNECTION

Connect the lines (L / brown) and (N / blue) to the respective colour-coded free supply terminals on the terminal block of the lower top-hat rail.



MODBUS WIRING

The Modbus is wired by clamping the white Modbus wire (item 7 in the parts list) from the PNI socket A to the RFID module socket A and the red Modbus wire from B **(PNI)** to B **(RFID).** The **RFID module** is magnetically attached to the mounting plate and can be removed for wiring (see Figure 3).

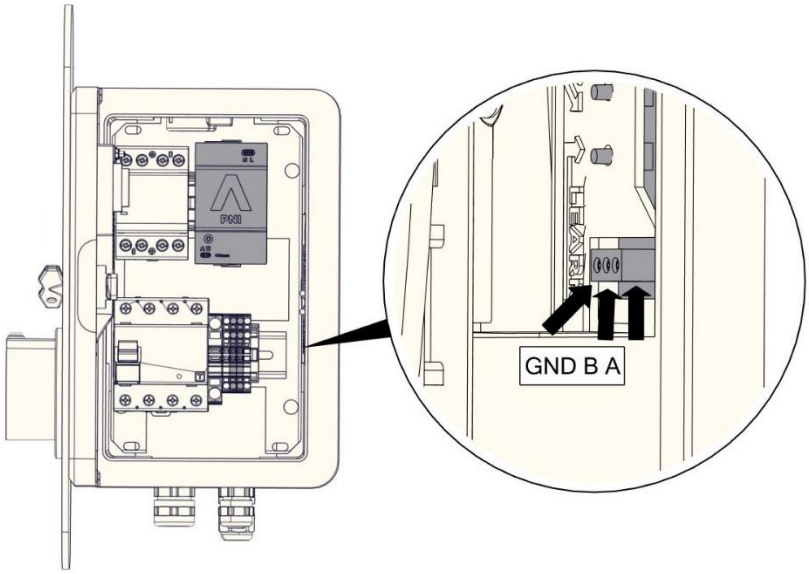


Figure 3 Modbus terminal on RFID module

In addition, the cables must be routed inside the wallbox as shown in Figure 4.
Make sure that the cable always runs in the silicone hose supplied.

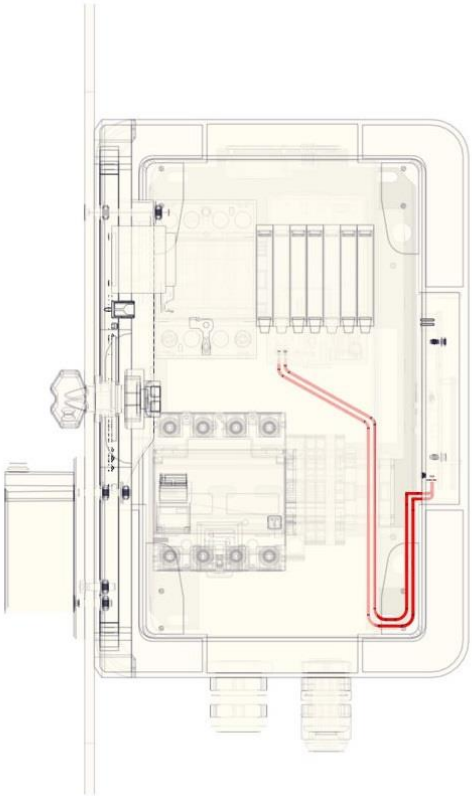


Figure 4 Recommendation Modbus cable routing

Remove the 120 Ω terminating resistor from the A and B terminals of the RFID module. This is only required if the **PNI** is connected via a cable length > 1m and/or if there is faulty communication (the initialisation of the web interface hangs).

NETWORK CONNECTION

To establish the network connection, a network cable (one side without a plug) and an RJ45 plug are required. During installation, make sure that the unplugged side of the network cable is inserted into the wallbox first and that the plug is mounted on the end of the cable only afterwards.

In the next step, connect the network cable to the RJ45 socket on the PNI using the RJ45 socket (item 7) and the slim patch cable (item 6) included in the scope of delivery. Make sure that the plug snaps into the socket

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When laying the cables, it is essential to ensure that they are not crushed when opening and closing the door.

TECHNICAL DATA

Tabelle 1 Technische Daten des **PNI**

Nominal voltage UDC [V]	12
Power consumption [W]	0,72
Storage/transport temperature	-20°C to +80°C
Relative air humidity [%]	max. 80 (non-condensing)
Dimensions (W x H x D)	98 mm x 25mm x 63mm
Weight [kg]	0,029
Mounting location	ALPHA WALLBOX Top-hat rail
Mounting type	Plug-in assembly
Connection type	Control board socket
Modbus connection type	Screw terminals
Connection type network	RJ45 jack
Connection cross-section Modbus	0,5mm²
Network transmission rate	100Mbit/s
Software interfaces	Web interface, Modbus TCP, OCPP 2.0.1 (optionally retrofittable)

COMPATIBILITY RFID MODULE

The functionality of the RFID module is retained by the addition of the PNI. The wallbox can still be unlocked and a charging process started by inserting a valid RFID card. As soon as an RFID card has been tuned into the wallbox, a locking timer is active, which sets the wallbox back to the "LOCKED" state approx. 30 seconds after unlocking. If all cards are deleted from the RFID module, the lock timer is deactivated again.

This lock timer also works in conjunction with the PNI. If a charging point is unlocked via the web interface, the respective side is locked after approx. 30 seconds if no car is connected..

The status in the web interface is also controlled by the RFID module. When a charging point is unlocked by an RFID card, the display in the web interface changes to the status "READY "* (see section STATUS DISPLAY).If all the taught-in cards are deleted from the RFID module, the wallbox must be restarted once. This step serves to correctly display the statuses in the web interface.

*no car connected

INITIAL STARTUP

1. Once the **PNI** is connected as described in the section ELECTRICAL CONNECTION & ASSEMBLY, the wallbox can be switched on again.
2. In the next step, the two status LEDs on the RJ45 socket should light up.
3. Now the web interface of the **PNI** can be accessed as explained in the section OPERATION

OPERATION

The **PNI** is operated and configured using a web interface. This is available at the URL http://alpha-xt and only requires a common web browser (Firefox, Chrome, Safari, etc.). This means that the **PNI** can be accessed from a PC as well as from a tablet or smartphone. Please note that the initial initialisation of the **PNI** can take up to 2 minutes, depending on the **WALLBOX** and **RFID** module used. The data query can also take up to 30s depending on the combination used. For more complex installations, see the **NETWORK CONFIGURATION** section.

Before calling up the web interface, it is recommended to clear the browser cache. This can be done with the key combination: CTRL + F5 (Firefox, Chrome, Edge) or CTRL + R (Safari).

If the "HTTPS-only mode" is active in the browser, the button "Continue to HTTP page" must be pressed when the warning page appears. Please note that the URL must be called up with http://!

The default password for logging into the control interface of the PI is: ALPHA_XT.

After logging in for the first time, the password should be changed in the Settings tab (see section **MENU ITEMS SETTINGS)** and saved securely.

Furthermore, please note that only one participant can be logged into the web interface at a time.

EXPLANATION OF THE WEB INTERFACE DISPLAYS

After successfully logging into the web interface, the main menu of the PI appears as shown in Figure 5.

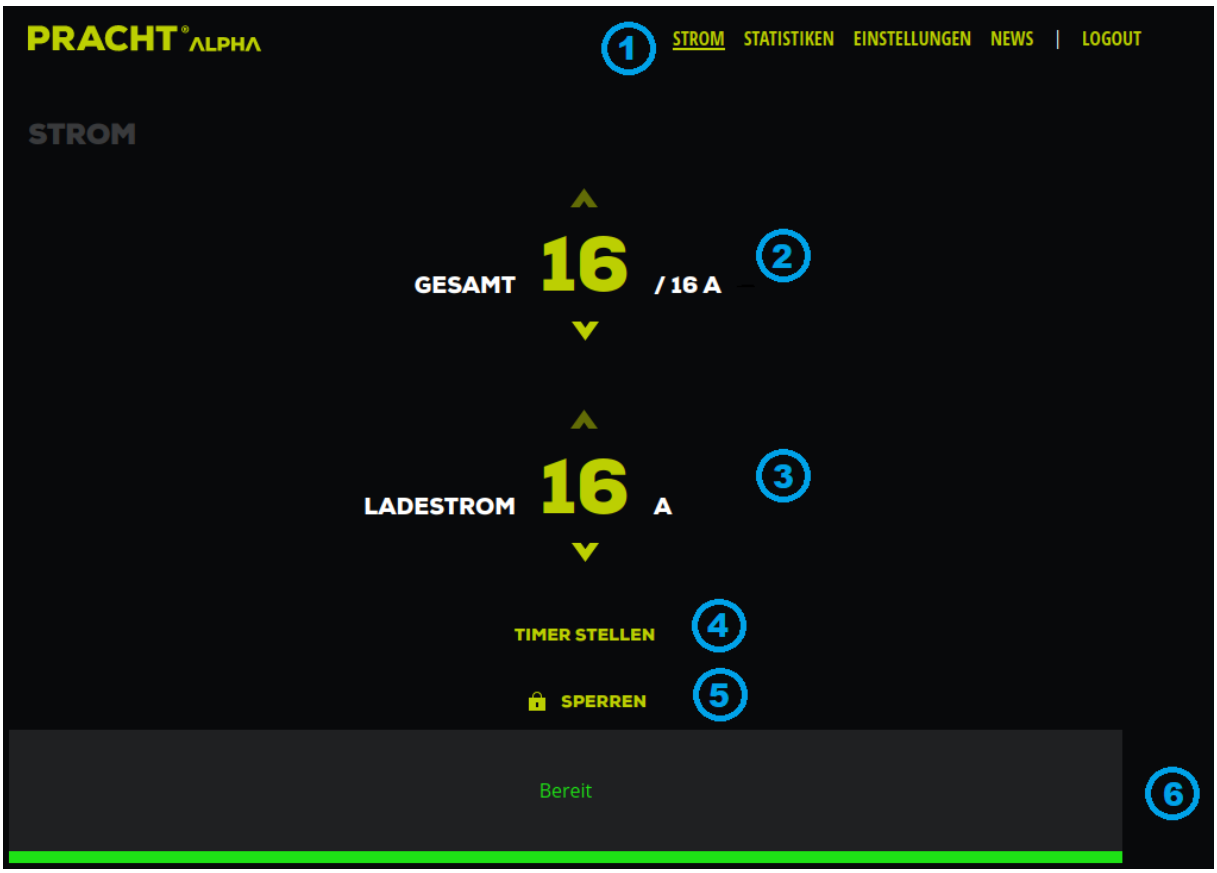

Figure 5 Main menu web interface PNI

This main menu contains various functionalities which are listed below:

UNLOCK - If an **RFID** card is tuned into the **RFID module** (see section **COMPATIBILITY RFID MODULE**) or if the wallbox has been locked via the PNI, the charging point must be unlocked before us

1. tab Display - Here you can switch between the individual submenus (see section MENU ITEMS).
2. display and setting the total current of the ALPHA Wallbox (see section POWER SETTINGS).
3. display and setting of the charging point-specific current
4. button to activate a timer (see section TIMER SETTINGS).
    - When pressed, the current charging process is terminated and the respective charging point is locked.
5. display of the current status of the respective charging point (see item STATUS DISPLAY).

MENU ITEMS

The **PNI** has several submenus in which various functions can be called up.

The submenu **CURRENT** represents the main menu, the functionalities of which were dealt with in the previous section.

In the **STATISTICS** menu item, the current temperatures of the **WALLBOX** are displayed as well as charging point statistics. These charging point statistics show the charging process of the last 24 hours or the process of the last 30 days.

Under the item **SETTINGS**, the password of the **PNI** can be changed, the network configuration can be adjusted, settings for the automatic update process can be made and the Modbus **TCP** interface can be activated. In addition, the current device version of the PNI and its serial number are displayed.

After changing the password, make sure that the password has been written down or saved securely, otherwise you may be locked out of the web interface (see section TROUBLESHOOTING).

A news feed is displayed in the tab PRACHT. There is also a link to the PRACHT homepage, from where you can contact the support team.

POWER SETTINGS

If your wallbox is an ALPHA XT with only 1 charging point, i.e. ALPHA MONO (XT), it makes no difference to you whether you change the maximum total current or the current assigned to the charging point. However, the charging point-specific current is limited by the set total current.

The permissible total current can be set in the software between 6A and 32A, depending on the configuration of the ALPHA WALLBOX. The set total current has a direct effect on the distribution of the current to the two charging points if the PNI is installed in a double charger (see point 3 in figure 5).

In the case of odd current settings, the LEFT charging point is prioritised and receives the higher current (e.g. 15A - LEFT 8A and RIGHT 7A). The limit for the current distribution is 12A total current, so that both charging points can still charge with at least 6A. If the permissible total current is below a limit of 12A and there is a charging request from both charging points, the LEFT charging point is prioritised. The complete set charging current is made available to the LEFT charging point. The charging point on the right remains inactive until either the total current exceeds the limit of 12A again or the charging request of the charging point LEFT goes out. This can be the case if the active charging process is terminated by the user or the vehicle is fully charged.

A hardware setting of the permissible total current of the ALPHA WALLBOX is made on the main board of the WALLBOX (see installation instructions ALPHA XT).

TIMER SETTINGS

The TIMER SET button (see point 4 in Figure 5) can be used to set the time for how long the charging point should remain active. The time span ranges from one minute to a maximum of 24 hours. After the specified time has elapsed, the charging process is terminated and the respective charging point is blocked.

If a timer has been set, it can be deactivated by pressing the TIMER STOP button. This appears at the position where the TIMER SET button was previously located. In addition, a clock appears in the status field (point 6 in figure 5), which shows the remaining time of the timer.

STATUS DISPLAY

- LOCKED
    - Charging is not possible in this status. It is possible to connect a vehicle. Only when the charging point is UNLOCKED does the **PNI** switch to the READY, CONNECTED or CHARGING CURRENT status.
- READY
- If a vehicle is connected in this status, the PI jumps to the status CONNECTED or CHARGING CURRENT depending on the request from the vehicle.
- CONNECTED
    - In this status, a vehicle is connected, but there is no charging request.
- CHARGING CURRENTADESTROM
- In this status, the web interface displays the current charging current of the respective charging point.
- Clock running
    - The time displayed represents the current TIMER value and provides information on when the current charging process at the charging point will end. After completion of the charging process, the PNI changes to LOCKED status and the charging point is locked. If the charging process is terminated manually while the TIMER is running, this action is prioritised and the termination and locking of the charging point takes place immediately and the TIMER value disappears.
- DISTURBANCE
    - If the WALLBOX is in the malfunction mode, this is caused by the interface between the car and the wallbox. To rectify the fault, the connection to the car must be disconnected and re-established.

COMPATIBILITY

The **PNI** is compatible with all previously released versions of the **WALLBOX ALPHA XT** and all RFID modules. However, depending on the models and combinations, there are different scopes of functions.

The limitations of the functional scope of the various combinations are as follows:

VERSION ALHA XT/ VERSION RFID MODUL	<6	≥6
V1	• EXIT LOAD and SET TIMER button not available • TEMPERATURE UP button not available • -Status "LOCKED" is not available	• EXIT LOAD and SET TIMER button not available
V2 and V2 D3	• TEMPERATURE ABOVE not available	• Full range of functions

MODBUS TCP REGISTER

The Modbus TCP interface uses port 502, with the PNI addressing Modbus ID 1 by default.

If the Modbus ID or baud rate has been changed beforehand, a reset of the RFID module and a restart of the wallbox is necessary.

Register type 40XXX read and write, register type 30XXX read only.

Modbus address	Modbus register		Initial value	Values Type
0	40001	Modbus ID	1	
1	40002	Modbus baud rate	96	(equivalent to 9600)
2	40003	max. total current limit	255	in A (values below 6 A lead to shutdown)
3	40004	max. current KFZ1 limit	255	in A (values below 6 A lead to shutdown)
4	40005	max. current KFZ2 limit	255	in A (values below 6 A lead to shutdown)
11	30012	Allocated current KFZ1	0	in A
12	30013	Allocated current KFZ2	0	in A
74	30075	RFID cards taught (number)	255	
100	30101	Software version RFID and Modbus module	255	Decimal value Software version (D3 -> "3")
101	30102	Software version main board	255	Decimal value Software version (D3 -> "3")
102	40103	Release Register Charging Points		1 Share All 2 Lock all 11 Enable charging point 1 21 Lock charging point 1 12 Enable charging point 2 22 Lock charging point 2 Automatic locking takes place ~30 seconds after release! (Register available from software D2)
103	30104	Temperature in the box	255	(Wert Register -72)*0,4244= Temp in °C
106	30107	Status car1	255	0 no car, 1 car connected, 2 charging request, 3 charging request with fan, 4 short circuit
107	30108	Status KFZ2	255	0 no car, 1 car connected, 2 charging request, 3 charging request with fan, 4 short circuit

<table>
<tr><td>114</td><td>30115</td><td>Set charging current Supply line</td><td>255</td><td>Value in A of the jumper position</td></tr>
<tr><td>115</td><td>30116</td><td>Set charging current Supply line after corrections Temperature and setting</td><td>255</td><td>Value in A that is available for all connected vehicles in total.</td></tr>
<tr><td>116</td><td>30117</td><td>Lock status display</td><td>0</td><td><table><tr><td>0 (0b00)</td><td>Box approved</td></tr><tr><td>1 (0b01)</td><td>Charging point 1 closed</td></tr><tr><td>2 (0b10)</td><td>Charging point 2 Locked</td></tr><tr><td>3 (0b11)</td><td>Both charging points closed</td></tr></table></td></tr>
</table>

Information about RFID cards can be requested at support@pracht.com, depending on the software version.

NETWORK CONFIGURATION

If more than one **PNI** is registered in the network, the provisioning of the individual PNI modules takes place on the basis of their IP addresses. The **PNI** is assigned an IP v4 address by the DHCP server as standard. This requires increased knowledge of network commissioning and should only be carried out by trained specialist personnel. The individual **PNIs** are now only accessible via their IP addresses assigned in the network via DHCP. Consequently, calling up the web interface of the corresponding **PNI** requires entering the IP address assigned to it in the browser.

This should be done with care, as incorrect entry of the values may result in being locked out of the **PNI** web interface and this setting can only be undone by resetting to factory settings (see section FACTORY RESET).

If the **PNI** is used in specific firewall environments, no guarantee is given for the correct function of the name resolution of the **PNI**. The accessibility of the **PNI** via the entry of the IP address should be guaranteed in any state. It is the responsibility of the end user or the operator of the IT infrastructure to ensure correct accessibility or forwarding to the web interface provided by the **PNI**.

If a **PNI** module is to be replaced, make sure that after removing the module to be replaced, its **DNS** entry in the DHCP server is deleted before the new **PNI** module is added. This step serves to maintain the clarity of the modules in the router and to prevent routing problems.

FACTORY RESET

To reset the **PNI** to factory settings, it is necessary to open the wallbox. In the next step, the box must be disconnected from the power supply and the interior cover must be removed as described on page 4. Now press the reset button on the **PNI**. This is located at the bottom left of the housing. (see figure 1). The button must be held for 30 seconds and the wallbox must be re-energised. As soon as the status LEDs on the RJ45 socket light up again, the button can be released and the reset to the factory

settings is complete. If everything has worked, the password is reset to the default password and all network settings are reset to the initial settings.

OTA UPDATES

In the default state, the PNI automatically initiates an encrypted SSL connection to the update server and checks whether updates are available. This is done via port 443.

The OTA update function can be activated or deactivated in the **SETTINGS** tab (see figure 5).

TROUBLESHOOTING

Below you will find a table with errors that can occur and the respective method for troubleshooting.

If none of the methods work, please contact our support.

ERROR DESCRIPTION	FEHLERBEHEBUNG
Web interface cannot be accessed	If the web interface cannot be called up despite repeated entry of the URL listed in section OPERATION, it is necessary to check in the web interface of the router used whether the **PNI** is listed under the DNS entry "alpha-xt". If the entry is available, you can try to call up the web interface by entering the IPV4 address assigned by the router in the address bar of the browser.
PNI is not displayed in the router's web interface	If the PNI is not available in the network, it is necessary to check the Ethernet cable. In addition, the status LED on the RJ45 socket of the **PNI** should be observed.
RJ45 socket LEDs do not light up	If there is no light on the status LED of the RJ45 socket and the patch cable is connected correctly, there is a fault in the power supply. To rectify the fault, check the installation according to the section ELECTRICAL CONNECTION & ASSEMBLY. Furthermore, there may be an interruption in the network cable.
Login does not work	Please check that you have entered the password correctly. If the Password has been forgotten, see FACTORY RESET.
Page does not load after logging in	If the loading process of the web interface takes longer than 5 minutes, the Modbus connection between the **PNI** and the RFID module should be checked (see section INITIAL START-UP).
Status "FAULT" remains after repeated plugging and unplugging of the car	Please contact customer support and describe the detailed installation and set-up situation of the wallbox.
The wrong number of charging points is displayed in the web interface	Make sure that the jumper (see page 5) is correctly installed. Jumper plugged in = 1 charging point Jumper not plugged in = 2 charging points

ENVIRONMENT

The packaging material is disposed of via the collection containers for paper and plastics provided for your region.

The disposal of old appliances and their accessories is carried out in accordance with the national and regional regulations for the disposal of electrical and electronic appliances. Accordingly, these must not be disposed of with household or bulky waste.

CONTACT ADDRESS

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