

Part No. 907801

SKYN1 PXP FORCE BOX

Part No. 907802

SKYN1 PXP FORCE BUTTON



Table of Contents

Overview

Product Overview & Key Specifications	1
Quick Tips & Quick Connection Guide (5 Steps).....	2

Hardware & Wiring

Relay Box Connection — Control MAX Terminal Connections	3
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App Setup

Installing the App (Strands Control)	4
Mobile App Setup — Step-by-Step Walkthrough	5–7

Detailed Information: Force Box, Button and Strands Application

1.Mounting	8
2.System Components	8
3.Key Concepts	9
4.Setting Up the Strands Application (Steps 1–6).....	9–13
5.Light Indicator.....	13–15
6.System Protections.....	15
7.Restart and Reset.....	16
8.Maintenance and Inspection.....	16
9.Technical Information.....	16–17
10Troubleshooting.....	17

Reference & Legal

Force Box Contents, Legal Mounting, Product Care, Installation & Warning	17
FAQs.....	18-21

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PXP

The SKYN1 PXP System is Strands Lighting Division's modular power-switching platform for auxiliary lighting and vehicle accessories. It is built from three parts that work together:



Force Box

The power-switching unit. Mounts near the battery and distributes power to your accessories through 4 independent output channels.



Strands Control App

Configures the Force Box, pairs devices, and builds custom functions over Bluetooth. Free to download.



Force Button(s)

Physical trigger switches that tell the Force Box when to switch an output on or off. Add as many as your setup needs.

The Force Box and the Strands Control app are supplied together and are always used as a pair — the app is how you set up and control the box. Force buttons are sold separately, so you only buy the number of physical switches your installation actually needs.

Key specifications

- 4 output channels (O1–O4), each rated up to 15 A / 12 V (max total for all ports 720W) or 10A / 24V (max total for all ports 960W), giving the box a combined switching capacity protected by a 60A for 12V / 40A for 24V MIDI main fuse.
- Up to 3 physical trigger inputs (INP1–INP3), plus a dedicated switch feed (SW+/SW–) for the Force button or any other function.
- 2 status output contacts (C1/C2) for reporting the system's state to other equipment.
- Configurable shutdown and warning voltage thresholds, so the box protects your vehicle's battery from over-discharge.
- Controlled entirely over Bluetooth through the free Strands Control app.

Get the app

Strands Control is free and available for both Android and iOS. Search for “Strands Control” on Google Play or the Apple App Store.

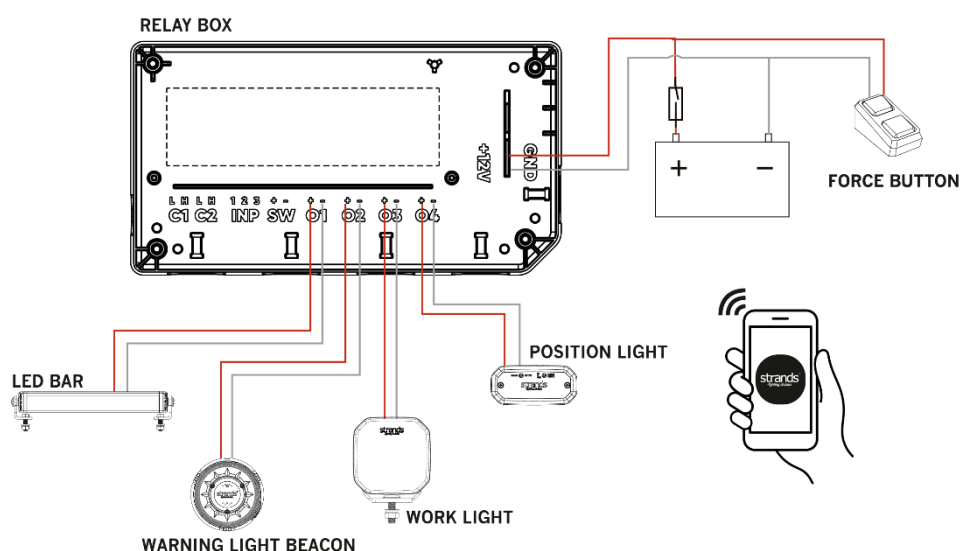


Quick tips before you start

- Turn on Bluetooth (and location permissions, required by Android/iOS for Bluetooth scanning) on your phone before pairing.
- Stay within a few meters of the Force Box during setup for a reliable connection.
- Mount the Force Box in a dry, accessible location near the battery. Easy to mount and wire — no special tools beyond a standard terminal screwdriver are needed.
- Label each output cable as you connect it — this makes it much easier to match functions in the app later.
- Note down the vehicle's Access Code and Network ID (shown on the app's Vehicle screen) in case you need to re-add the vehicle on another phone.
- You may connect two or more relay box and force button with same mobile app. (Max up to 6 different unit or box)
- More detail information are on page 8 to 16.

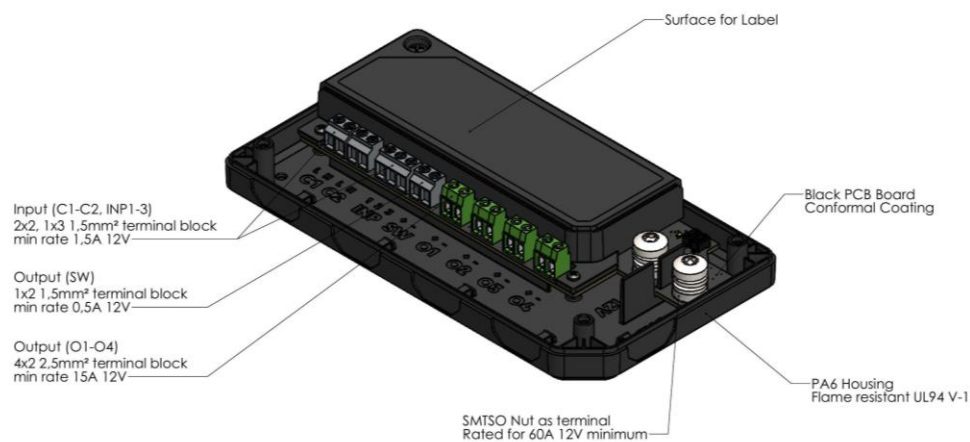
Quick connection guide (5 steps)

1. **Mount** – Fix the Force Box in a dry, accessible location near the battery, using the mounting points on the base.
2. **Fuse** – Fit the 60A for 12V / 40A for 24V MIDI fuse into the fuse holder. Keep the battery disconnected until wiring is complete.
3. **Power** – connect +12V IN and GND to the vehicle's battery, routed through the fuse holder (see page 3 for terminal ratings).
4. **Wire** – Connect your lights to Outputs O1–O4 (up to 15A for 12V / 10A for 24V each) and the Force button can be powered anywhere in vehicle.
5. **Pair** – Power up the system, install Strands Control application, then use Find devices to pair the Force Box and Force button (To power the buttons, connect only the **red** and **black** wires) over Bluetooth, create functions and ready to use (see more information for application on page 4 to 7)



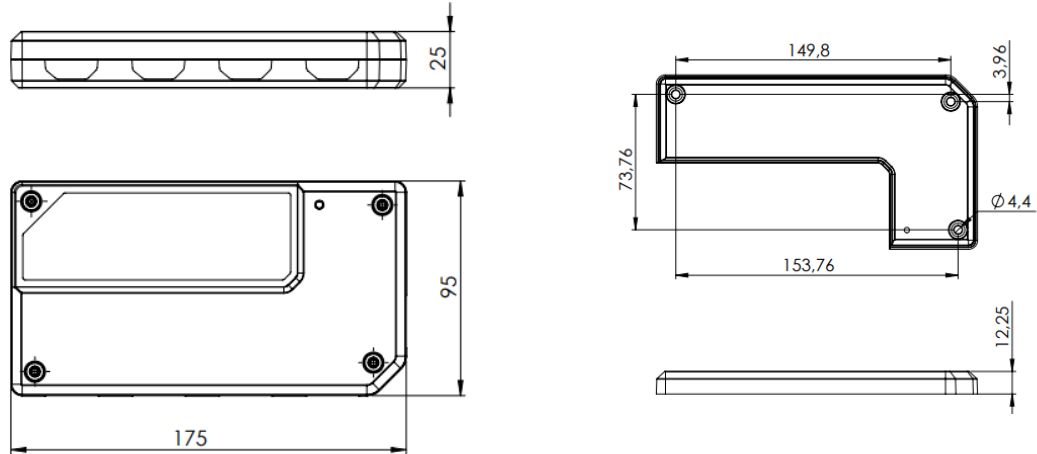
RELAY BOX CONNECTION

Control MAX – Terminal Connections



TERMINAL	RATING	FUNCTION
C1 / C2	2x2, 1x3, 1.5 mm ² min. 1.5 A / 12 V	Status output contacts. Logic-level signal reporting the Control MAX's internal state to other equipment (do not use as a power output).
INP1 – INP3	1.5 mm ² min. 1.5 A / 12 V	Trigger inputs from the Force button. INP1 activates Output 1; INP2 activates Outputs 2 and 3; INP3 (negative) activates Output 4.
SW+ / SW–	1x2, 1.5 mm ² min. 0.5 A / 12 V	Switch feed. Supplies the positive and negative feed used to trigger the connected push-button(s).
O1 – O4	4x2, 2.5 mm ² min. 15 A / 12 V	Main power outputs to the connected lights, each individually fused from within the app (see “Configure Output” in the app walkthrough).
+12V IN / GND	SMTSO nut terminal min. 60 A / 12 V	Main power feed from the vehicle battery, protected by the 60 A MIDI fuse fitted inside the Force Box.

Housing: PA6, flame resistant to UL94 V-1. PCB: black, conformal coated for moisture protection. Wire size must match the terminal block ratings above — undersized wire is the most common cause of nuisance fuse trips.



INSTALLING THE APP

Strands Control

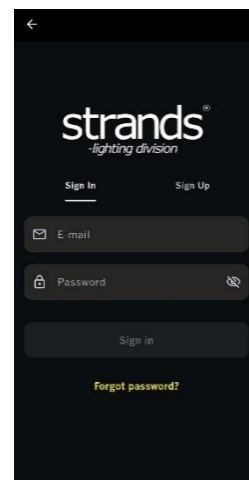
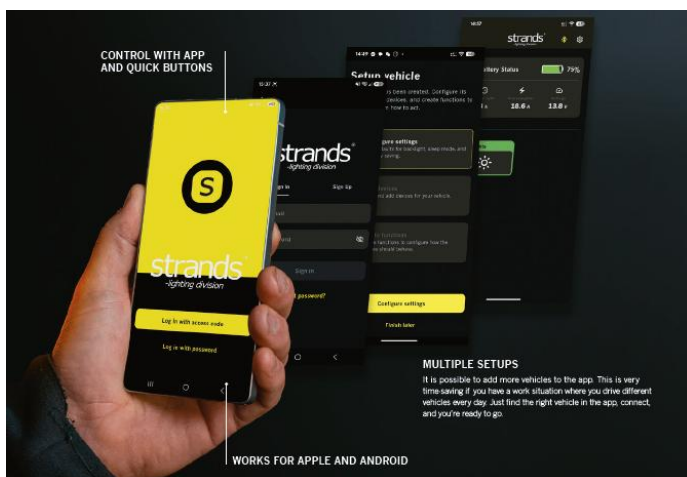
Download the app

Download the application from the Play Store or the Google App Store — search for “Strands Control”. It is free for both Android and iOS.

What you'll do

Once installed, open Strands Control and follow the on-screen setup.

*Sign up account in strands control application.



1

Add your vehicle

Create a new vehicle profile in the app and configure its default settings.

2

Add & pair devices

Scan for the Force Box and Force button(s), rename them, and provision them to the vehicle.

3

Create functions

Link a Force button input to one or more Force Box outputs — this is what turns a button press into a light switching on.

The full walkthrough below shows every screen, in order, from adding your first vehicle to switching on your first function — so you can follow along step by step on your own phone.

Troubleshooting pairing

- If a device doesn't appear in the scan, move closer to the Force Box and make sure it is powered (connected to the battery).
- If pairing fails, close and reopen the app, then try Find devices again.
- Use Identify on the device list to make a unit blink or beep, confirming you've selected the right one before renaming it.

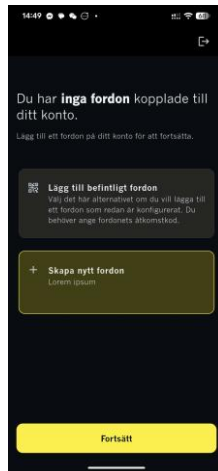
MOBILE APP SETUP

Step-by-step guide: creating a vehicle, adding devices, and building a function (example: Driving lights).



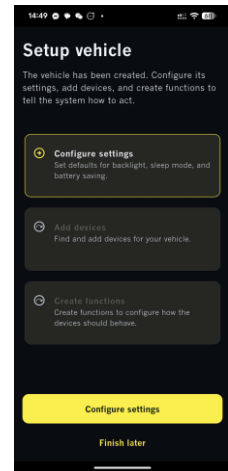
1. Start – No Vehicle

No vehicle is linked to the account yet. Tap Add existing vehicle, or Create new vehicle to begin.



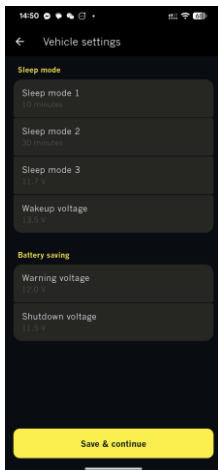
2. Create New Vehicle

“Create new vehicle” is selected (green outline). Tap Continue.



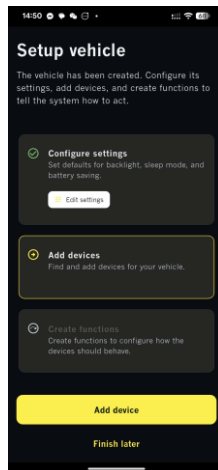
3. Setup: Configure Settings

The vehicle has been created. Tap the yellow Configure settings button to set the defaults.



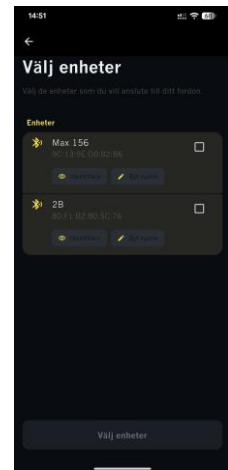
4. Vehicle Settings

Set Sleep mode 1/2/3 timers, wakeup voltage, and the warning/shutdown voltage. Tap Save & continue.



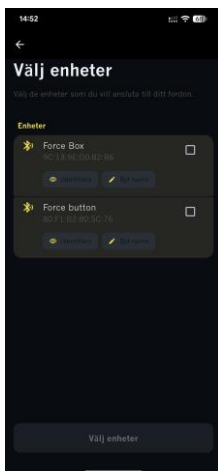
6. Setup: Add Devices

Tap Add device to scan for hardware.



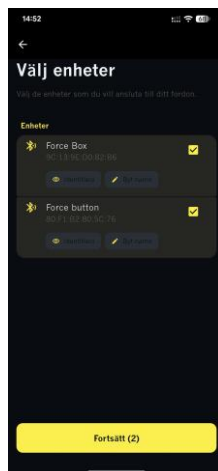
6. Devices Found

The Bluetooth scan lists the factory device names. Tick the checkbox to select a device; Identify blinks the unit; Rename changes its name.



7. Devices Renamed

The units have been renamed to Force Box and Force button; they are still unchecked.



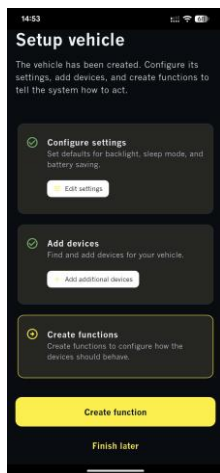
8. Devices Selected

Both devices are checked. Tap Continue (2) to pair the two selected devices.



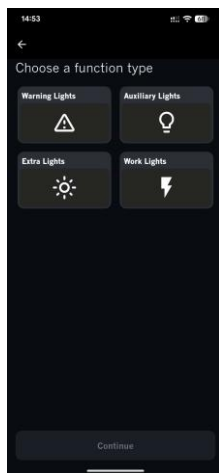
9. Provisioning

The app writes the configuration to each unit; a green check confirms completion. Tap Finish when done.



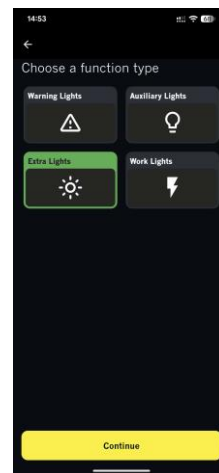
10. Setup: Create Functions

Settings and devices are complete. Tap Create function to define how the devices behave.



11. Choose Function Type

Choose from Warning Lights, Auxiliary Lights, Extra Lights, or Work Lights. Continue stays disabled until a type is selected.



12. Function Type Selected

Extra Lights is selected (green). Tap Continue.



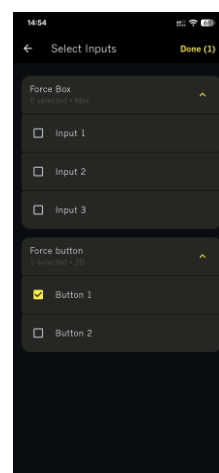
13. Create Function – Defaults

Name the function. With the Shutdown/Warning voltage toggles off, the function uses the vehicle's default values.



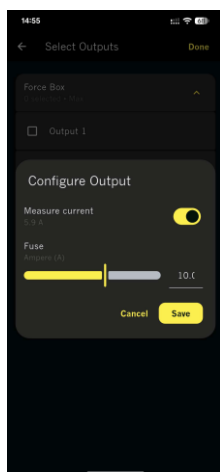
14. Create Function – Custom Voltage

Turning the toggles on lets you set a custom Shutdown voltage (12.2 V) and Warning voltage (12.4 V) for this function only.



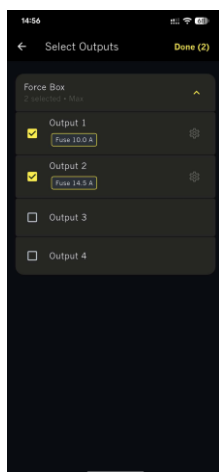
15. Select Inputs

Under Force button, tick Button 1 as the trigger for this function, then tap Done (1).



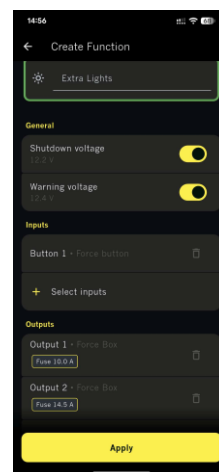
16. Configure Output

The gear icon opens the output configuration: a Measure current toggle (with a live amperage reading) and the Fuse rating field. Save or Cancel.



17. Select Outputs

Under Force Box, tick Output 1 and Output 2 if light is connected to that specific output then. You can connect single output as well.



18. Function Ready

Button 1 is now linked to Output 1 and Output 2, with their fuse ratings shown. Tap Apply to save the function.

Detailed Information: Force Box, Button and Strands Application

1. Mounting

1.1 Location

Force Box must be mounted protected from moisture. The unit is designed for a dry or weather-protected space and cannot withstand being hosed down or exposed to rain and splashing water. Choose a location where the unit sits securely, is not exposed to heavy vibration, and remains accessible for servicing.

1.2 Fixing method

- **Screws** — use screws through the mounting holes. Recommended where the unit is exposed to vibration or will be permanently installed.
- **Mounting tape** — suitable on smooth, clean surfaces where drilling is not wanted. Clean the surface thoroughly before mounting.

1.3 Cable direction

The cables must always exit the unit pointing downward. Condensation and moisture follow the cable, and with the cables routed downward, any water drips off instead of running into the unit.

It is good practice to route the cables with a drip loop just below the unit — a small downward bend where any water collects and drips off before it reaches the connector.

1.4 Cable cross-section and fuse

Force Box must be fused at a maximum of 60 A. This is the unit's upper limit and must never be exceeded.

60 A is a ceiling, not a recommendation. The fuse should be matched to what the connected products actually consume and to the cable cross-section. If your equipment draws a total of 20 A, the fuse should be chosen accordingly — not set to 60 A simply because it is permitted.

The same applies to the cables: match the cross-section to the current, both on the supply feed to the unit and on the cables running out to each load. An undersized cable becomes hot long before the fuse trips.

The fuse's job is to protect the cable. The electronics inside Force Box have their own, faster protection, described in Section 6, System protections.

2. System components

The system is built from devices that connect wirelessly to each other. The range grows over time; the devices available today are described below.

Device	Function
Force Box	Control unit. Four powered outputs and three inputs. Measures current and voltage, protects the outputs, and switches them according to commands.
Force Button	Control panel. Sends commands wirelessly and shows status with lights in the buttons.
Mobile app	Used to set up the system: adding devices, creating functions, and setting limit values.

The devices communicate over their own wireless network. Several devices of the same type can work together: a single button can control outputs on several devices at once, and they switch in the same instant.

3. Key concepts

Term	Meaning
Function	The link between the SOURCES that control something and the OUTPUTS that follow them. Sources can be one or more buttons on a Force Button, commands from the app, or a signal on an input. The outputs can sit on several Force Box units.
Output	One of the unit's four powered connections.
Input	One of the unit's three control inputs for an external signal, for example ignition.
Current limit	The highest current draw you allow on an output. This is the basis for the unit's protection.
Battery guard	Monitors the battery voltage and switches off outputs before the battery becomes too deeply discharged.

A function is therefore not the same thing as a button. Several sources can control the same function for example a button in the cab, a button at the rear of the vehicle, and an ignition signal and the function can in turn drive outputs on several units.

4. Setting up the Strands application

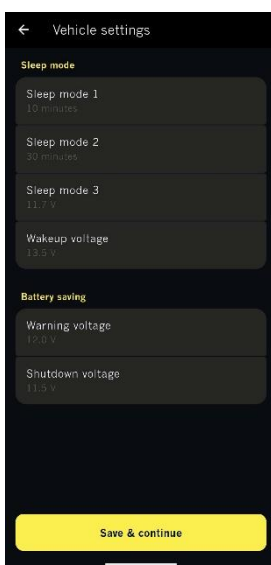
The steps below use the mobile app to configure Force Box and Force Button. The order below matters — skipping a step often leaves the system partly working, which is harder to troubleshoot than if it did not work at all.

Step 1 — Connect and power up

Mount the unit as described in Part 1, Section 1, and connect the supply with the correct fuse. Connect loads to the outputs and any control signals to the inputs.

Step 2 — Adjust general settings (optional)

The system's general settings are preconfigured and normally do not need to be changed. If you do want to adjust them, it is easiest to do so before devices are added. The settings are found under Vehicle settings in the app.



Sleep modes control how the unit saves power while the vehicle is stationary. The unit goes into progressively deeper sleep in three stages and wakes automatically again when something happens — a button press, a signal on an input, or a rise in voltage (the vehicle is started or a charger is connected).

Setting	Default	Meaning
Sleep mode 1	7 hours	Time without activity before the unit goes into light sleep.
Sleep mode 2	24 hours	Time without activity before the unit goes into deeper sleep.
Sleep mode 3	11.7 V	Voltage at which the unit goes into deep sleep to preserve a discharged battery.
Wakeup voltage	13.5 V	Voltage at which the unit wakes from deep sleep — a sign the battery is charging.

The deeper the sleep, the less current the unit draws — but the longer it can take to respond. The default values are balanced to protect the battery without feeling sluggish in normal use.

The unit acknowledges the sleep mode with white blinks when it wakes and checks whether anything has happened. If there is no activity it goes back to sleep; if there is activity it returns to steady green. The number of blinks shows which mode it came from — see Section 5.2.

Battery saving is the general battery guard that applies to all outputs that have not been given their own levels: **Warning voltage** and Shutdown voltage. Individual functions can be given their own levels when they are created — see Step 4.

Upcoming app features. The general settings will also let you configure how long the backlight stays lit after the voltage drops below a level or a function is switched off, and the voltage threshold at which the backlight turns on.

Step 3 — Add the devices in the app

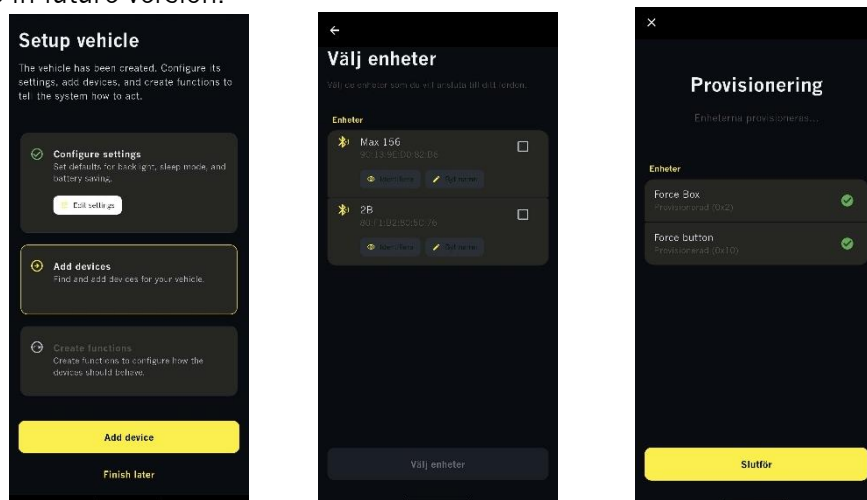
Start the app and search for new devices. Devices that do not already belong to a system appear as available.

- if you have several devices in front of you, tap Identify. The lights on the unit then blink so you know which one it is.
- name the devices while you have them in front of you. This makes it much easier to choose the right one later when creating functions.
- select which devices should belong to the system and confirm with the button at the bottom. The installation then runs.

The installation can sometimes fail on an individual device. If so, simply search for it again and repeat.

Do not disconnect the power in the first few seconds after a device has been added. Settings are saved a few seconds after being received, and a device that loses power before that may need to be added again.

In the app, Force Box is shown as Max and Force Button as Switch2 (with left/right added per unit). It might be different name in future version.

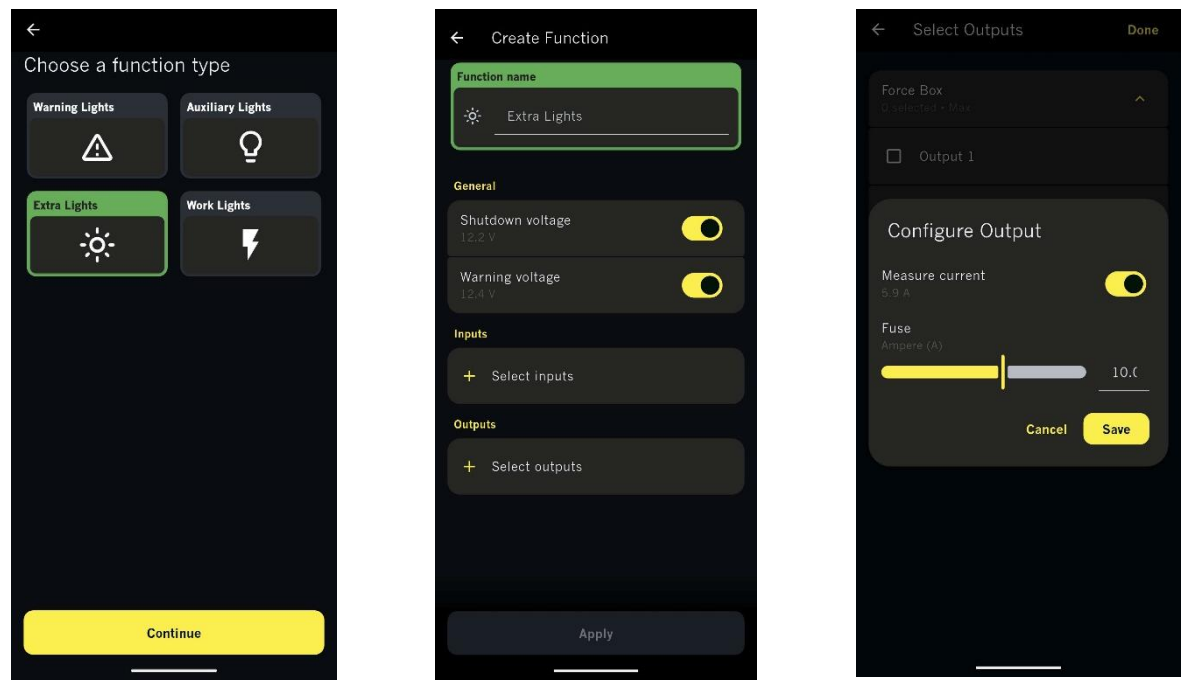


Step 4 — Create functions

When creating a function, you first choose a symbol. The symbol is shown in the app and on displays, and also determines which colours the buttons belonging to the function get.

The symbol also affects which products are suggested. For example, if you choose warning lights and there is a product with its own control in the system, it is selected automatically. If you do not want to include it, simply deselect it.

For ordinary outputs, such as those on Force Box, you choose yourself which outputs to include — across several units if the load is distributed.



General — voltage guard for the function

In the General box, each function can be given its own Warning voltage and Shutdown voltage, in addition to the general battery guard from Step 2. This is used when equipment has different levels of importance: less critical functions can be switched off earlier so that, for example, a refrigerator or the warning lights can stay on longer.

Set the voltage at which the function should warn and the voltage at which it should shut down. Typical values for a 12-volt system are 11.4 V for warning and 11.0 V for shutdown.

For 24-volt systems the values must be doubled (about 22.8 V and 22.0 V respectively). With values intended for 12 V, the guard never triggers on a 24 V system.

The system indicates that a function’s voltage guard has triggered as follows:

Event	Force Button	Output / unit
Warning (Warning voltage)	Red blink, about 200 ms once per second	The output stays on; the unit’s light blinks yellow
Shutdown (Shutdown voltage)	Red blink 0.5 s on / 0.5 s off for about 10 s	The output switches off; the unit’s light glows red and then goes out

Nothing restarts by itself after a shutdown — the function must be deliberately turned back on once the battery has been recharged.

Step 4b — Advanced output settings (blink pattern and dimming)

Once outputs have been chosen, each output can be given its own blink pattern and dim level under the function’s advanced settings. This is used mainly for warning lights and marker lights.

Mode	Appearance	Use
Steady	Continuously on	Work lighting, normal load
Double-blink	Two short blinks, short pause, repeating twice per second	Warning lights per the R65 pattern
Inferno	Fast, irregular flashing	Emergency-vehicle-style marking

Blinking occurs simultaneously on all units belonging to the function — they share a common timebase so the lights stay in step.

Under development. Blink pattern and dim level per output are moving into the function's advanced settings in the app and are not yet fully complete.

Step 5 — Choose what controls the function

This is where you link the sources: buttons, inputs, or both.

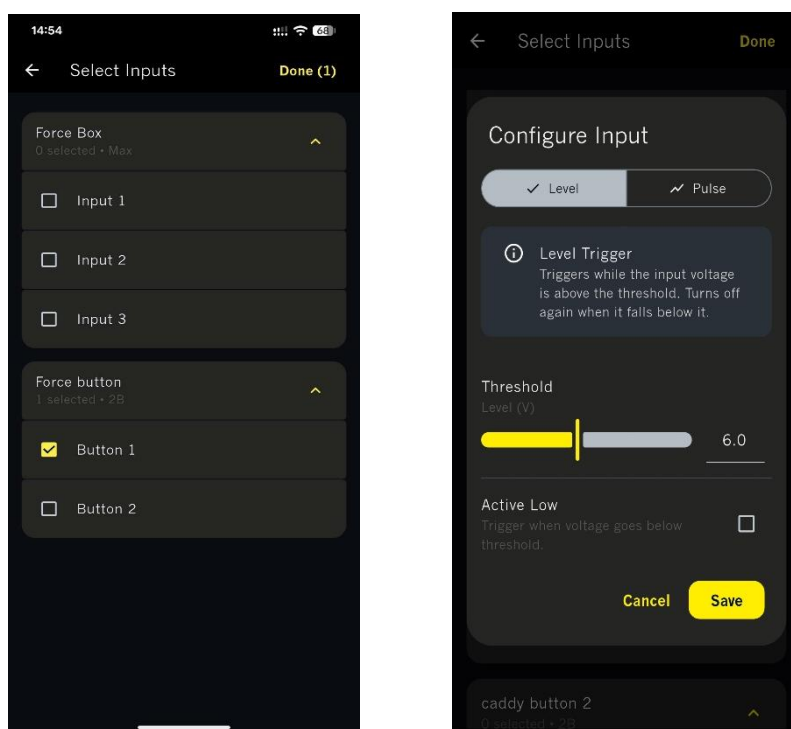
- **Buttons** — simply tick the buttons that should control the function.

Inputs are found on devices such as Force Box and can work in two ways.

Input mode	How it works
Analog	The function follows the signal: it turns on when the signal goes high and switches off when it goes low.
Trig	The function turns on with one signal and switches off on the next signal.

Under Advanced settings you can fine-tune the inputs: the threshold in volts, and whether the input should measure on a high or low level. For trig mode you can also set how long the trigger signal must be.

In the app, analog mode is called Level and trig mode is called Pulse.



Step 6 — Set the current limit per output

Specify the highest current each output should be allowed to draw. The app shows how much the product actually consumes — set the limit just above that, with margin for inrush currents. A light that draws 7 A in operation could reasonably be given 8–10 A.

At the same time, make sure the cable to the load has the correct cross-section for the limit you set.

The built-in protection works in two ways: it measures the average value and trips if the current exceeds the set value, and it also has a fast level at three times the chosen limit, capped at 30 A.

The main fuse to the unit must be able to interrupt current even in the event of a short circuit on one output. The unit's own protection safeguards the output, but the supply cable up to the unit is protected only by the main fuse.

5. Light indicator

5.1 The light on Force Box

The light shows	Meaning	What to do
Steady green	Normal operation, everything is fine	Nothing
Blinking yellow	Warning — low battery voltage, or a function approaching its voltage limit	Finish what you are doing. Charge the battery
Blinking red	Shutdown — the battery guard has tripped, or a function is locked out	Charge the battery. The outputs do not restart by themselves
Red, goes out after about 20 seconds	Saving power on an already discharged battery	Charge the battery
Blinking while connecting	The unit is being added to the system	Wait until it stops
Off (no blinking)	The unit has no power	Check the supply if this is unexpected

In sleep mode the unit is not fully off — it acknowledges with white blinks when it wakes and checks whether anything has happened. See Section 5.2.

5.2 White blinks in sleep mode

When the unit enters or wakes from a sleep mode, it shows which mode is involved with white blinks. The unit wakes at regular intervals and checks whether anything has happened: if there is no activity it goes back to sleep, and if there is activity it returns to steady green (normal operation).

Number of white blinks	Sleep mode
1 blink	Sleep mode 1 — light sleep (after 7 hours)
2 blinks	Sleep mode 2 — deeper sleep (after 24 hours)
3 blinks	Sleep mode 3 — deep sleep due to low battery voltage (below 11.7 V)

Three blinks mean the unit has gone into deep sleep because of low battery voltage. It wakes and returns to operation once the voltage rises again (wake-up voltage 13.5 V) — typically when the vehicle is started or a charger is connected.

5.3 The lights on Force Button

Each button has a light that shows the state of its function.

The light shows	Meaning	What to do
Off	The function is off	Press to turn on
Steady on	The function is on and everything is normal	Nothing

Blinking red, single button	Voltage warning for that specific function	Expect it to switch off soon. Finish the task
Blinking red, all buttons	Battery warning for the whole system	Charge the battery as soon as possible
Blinking red at intervals, all buttons	The battery guard has switched off	Charge the battery. Restart the functions manually afterwards
Goes out after a warning	Voltage is normal again	Nothing

Backlight. The buttons' backlight currently lights up when functions are active and follows the on/off traffic in the system.

Restarting a Force Button: disconnect the power, wait a few seconds, and reconnect. A restart does not affect any settings (see also Section 7.1).

Upcoming app features. Dimming of the backlight, setting how long it stays lit after the voltage drops or a function switches off, and a voltage threshold for when it lights up. See also Section 4, Step 2.

5.4 Blinking outputs

Blink pattern (steady, double-blink, inferno) and dim level are now set per output when the function is created — see Step 4b under Section 4, Setting up the Strands application.

6. System protections

Force Box has three independent protections. They work automatically and require no configuration beyond the current limit and the battery guard levels.

6.1 Overload protection

If an output draws more current than the set limit, it is switched off within a few hundredths of a second and locked out for a short time.

- **Common causes:** a seized motor, a chafed-through cable, or a load larger than the limit allows.
- **How to reset:** switch the function off and back on. If it trips again, look for the fault before raising the limit.

6.2 Short-circuit protection

In the event of a short circuit, the unit interrupts the current within a fraction of a millisecond — faster than any fuse. Only the faulty output is locked out; the other outputs continue unaffected.

How to reset: fix the short circuit, switch the function off, then back on.

Important: in a very severe short circuit, the output stage can be damaged even though the protection interrupts the current. This applies especially if the short circuit is already present when the output is switched on. Always check the installation before switching on an output after cable work.

6.3 Battery guard

The battery guard protects against the vehicle battery being discharged so deeply that it is damaged or the vehicle cannot be started.

- **At the warning level:** the buttons start blinking red. The system keeps working, but you should finish what you are doing.
- **At the shutdown level:** all outputs switch off. The unit's light glows red for twenty seconds and then goes out.

Nothing restarts by itself. Once the battery has been recharged, the outputs remain off until someone deliberately turns them back on. This is intentional — equipment must not be able to start unexpectedly when a charger is connected.

7. Restart and reset

7.1 Restarting a device

A restart does not affect any settings — everything is retained afterwards. Use it if a device is behaving unexpectedly.

- **Force box:** press SW1 on the unit. You can also disconnect the power, wait a few seconds, and reconnect.
- **Force button:** disconnect the power, wait a few seconds, and reconnect.

7.2 Resetting a device

A reset erases everything: the link to the system, functions, and settings. The device becomes new and must be added to the app again.

Use a reset when moving a device to a different system, or when it cannot be added even though it should be free.

- **Force box:** hold SW2 for three seconds. (White buttons above main + and -) The light glows red for as long as the button is held. When the reset completes, the unit acknowledges with three quick white blinks — you can then release the button.
- **Force button:** hold both buttons for about five seconds. The red light should glow for about five seconds and then go out. If it goes out earlier and the device cannot be found in the app, restart the device and repeat the reset.

The three white blinks confirm that the deletion has actually taken place. The red light only means the button is being held — it says nothing about whether the reset is complete.

Reset both devices if you change systems. A Force Button that still remembers an old system may send commands that nobody is listening for, which is difficult to troubleshoot.

8. Maintenance and inspection

- check connections and cable glands regularly — chafed cables are the most common cause of tripped protections.
- check that the cables still exit downward and that no drip loops have been straightened out.
- check that the fuse is sized to match the cable cross-section.
- after any cable work: check the installation before switching the output back on.
- keep the app up to date.

9. Technical information

This section is aimed at installers and service personnel. It is not needed for normal use.

9.1 Division of labour between the protections

Protection	Trips at	Response time	Intended for
Overload protection (software)	the set current limit	about 30 ms	seized motors, loads that are too large
Short-circuit protection (hardware)	three times the current limit, capped at 30 A	under 0.4 ms	a short circuit in the cable or load

9.2 The short-circuit threshold

The threshold is set automatically to three times the current limit you specify, capped at 30 A. From a current limit of 10 A and above, the threshold is therefore always at the cap.

Set current limit	Short-circuit threshold
4 A	12 A
5 A	15 A
8 A	24 A
10 A and above	30 A

9.3 Fuse

The maximum fuse rating for Force Box is 60 A. The fuse should be chosen to match the cable cross-section and the actual consumption, not the unit's maximum rating.

The fuse's job is to protect the cable in the event of a fault that the unit's own protection cannot handle in time, or at all. The unit's protection is substantially faster than a fuse, but it protects the output — not the cable supply running to the unit.

9.4 System voltage

The battery guard's levels are specified in volts and must be matched to the system voltage. Values intended for 12 V give no protection in a 24 V system, because the voltage never falls as far as the alarm level.

10. Troubleshooting

Symptom	Likely cause	Action
The device does not appear in the app when trying to add it	The device already belongs to a system	Reset the device as described in Section 7.2, and try again
An output does not turn on	The output is locked out after overload or a short circuit	Switch the function off and back on. Check the load
An output switches off immediately every time	The current limit is lower than what the load draws	Measure the load's current and raise the limit with margin
All buttons blink red	Battery warning for the whole system	Charge the battery
The outputs switched off and do not come back	The battery guard has tripped	Charge the battery and start the functions manually
A button lights up but the load does not work	The output may be damaged after a short circuit	Check with a measuring instrument. Contact service
The system responds slowly or unevenly	The devices are too far apart	Check the range between the devices

This section describes how Force Box is mounted and set up, what the lights on the devices mean, and how the system's protection behaves. It is intended both for the installer and for the day-to-day user.

Force Box contents

- Control MAX – the electronic control unit (item 1). Mounted on the base of the box.
- Fuse Holder MIDI
- Screws

---No wires are included in package

Assembly notes

- The three lid screws are packed separately in a zip-lock bag; the lid simply rests on top of the base until final installation.
- Fit the fuse into the fuse holder before wiring the box to the vehicle's battery.

Button Box contents: it has screw, 3M tape and stickers, connection wires

READ ALL THE INSTRUCTIONS AND STUDY THE DIAGRAMS BEFORE INSTALLING NEW LIGHT!

LEGAL MOUNTING

- Please check state and local laws for proper usage and mounting. Strands will not be responsible for products mounted incorrectly or in violation of local laws (e.g., ECE R48 regulation for the EU)

PRODUCT CARE

- Clean the product with lukewarm water and an alkaline degreaser. Avoid strong chemicals; rinse immediately if exposed. Do not use a pressure washer for cleaning.
- Take care if your light has a breather. Ensure it is protected against rain and dust, especially if it has a sticker breather. Damage to the breather due to incorrect installation will void the warranty.
- Internal moisture is normal and will dissipate through the breather vent after several days of use.
- We do not recommend painting the product housing. If paint is still applied, please ensure the breather is protected and an oven is not used for curing the paint. Otherwise, the warranty might be void.

INSTALLATION

- Ensure power is turned off during installation.
- Do not cut the connector cable to less than 50 cm. If the original cable is already shorter than 50 cm, leave it as is. Otherwise, the warranty will be void.
- Make sure to use only the correct accessories included in the package. Installation errors may void the warranty.
- Tighten screws, washers, and nuts to prevent them from loosening or chafing. Do not overtighten screws to avoid damaging the product's protective components.
- Use a watertight solution for wiring connections.

WARNING!

- For safe operation, use only the voltage specified in the product description. This light becomes hot under continuous use. Do not remove or touch the casing for at least 30 minutes after turning the lamp off.

Contact us if you need support: support@strands.se or +46(0)320-450450 Please also refer to the FAQ section on our website for more information.



Frequently Asked Questions for SKYN1 PXP

General & System Overview

Q: What does the system consist of?

A: Three parts that work together: a control unit with four powered outputs and three inputs (Force Box), a button panel that sends commands wirelessly (Force Button), and a mobile app used to set everything up (Mobilapp / Strands Control).

Q: What is a "function"?

A: A function is the link between the sources that control something (buttons, app commands, or an input signal) and the outputs that follow them. A function is not the same as a single button — several sources (e.g. a button in the cab, a button at the rear, and an ignition signal) can control one function, and that function can in turn drive outputs across several units.

Q: Can I connect more than one control unit or button panel?

A: Yes. Multiple units of the same type can work together in one system — a single button can switch outputs on several units at once, and they switch in the same instant. Up to 6 different units/boxes can be connected to the same mobile app.

Q: Is the app available in my language?

A: The app is available in Swedish (SE) and English (EN).

Q: What kind of light I can connect?

A: You can connect any strands lights on this relay box PXP system. Make sure that each channel has certain limit connect upto that limit only. 4 output channels (O1–O4), each rated up to 15 A / 12 V (max total for all ports 720W) or 10A / 24V (max total for all ports 960W). if you wanted to connect more light on same channel you can connect through external relay signal cable. Make sure that you cant use this system with SKYN1 EXP system.

Installation & Wiring

Q: Where should the control unit be mounted?

A: In a dry or weather-protected location near the battery, secured against heavy vibration, and kept accessible for servicing. The unit cannot withstand being hosed down or exposed to rain and splashing water.

Q: Which way should the cables exit the unit?

A: Always pointing downward, so condensation and rain drip off instead of running into the unit. A small downward drip loop just below the unit is good practice.

Q: What fuse should I use?

A: Maximum 60 A — this is a ceiling, not a target. Choose the fuse to match what your connected equipment actually draws and the cable's cross-section, not simply because 60 A is allowed. The fuse protects the supply cable to the unit; the unit's internal electronics protect the outputs themselves and react much faster than any fuse.

Q: What is the correct order for setting up the system?

A: 1) Mount and power the unit, connecting loads to outputs and signals to inputs. 2) Optionally adjust general settings (sleep modes, wakeup voltage, battery guard) before adding devices. 3) Add and name the devices in the app. 4) Create functions (choose a symbol, set voltage guard, select outputs). 5) Choose what controls each function (buttons and/or inputs). 6) Set the current limit per output. Skipping a step often leaves the system partly working, which is harder to troubleshoot than a complete failure.

Q: Can I connect multiple wires to the negative/ground terminal, or should the loads share a single output?

A: Both manuals recommend spreading a distributed load across several outputs — and even across several units — rather than overloading one output, when creating a function.

Adding & Naming Devices

Q: What happens if a device fails to install/pair?

A: It's common for an individual device to fail during installation. Simply search for it again and repeat — no need to restart the whole process.

Q: Can I lose settings if I disconnect power too soon after adding a device?

A: Yes. Settings are saved a few seconds after being received. A device that loses power in that window may need to be added to the system again. Wait until the confirmation (a steady state / green check) before disconnecting power.

Q: Why can't I find a device in the app when trying to add it?

A: It probably already belongs to another system. Reset the device (see "How do I factory-reset a device" below) and search again.

Q: What do Max / Switch2 and Force Box / Force button mean in the app?

A: These are the in-app device names: Supply Pro appears as "Max", Switch X2 appears as "Switch2" (with left/right suffix per unit). In the Force Box manual, the equivalent products are called Force Box and Force Button. Naming may differ slightly between app versions.

Functions, Inputs & Outputs

Q: What's the difference between Level (Analog) and Pulse (Trig) input modes?

A: Level/Analog: the function follows the signal directly — it turns on when the signal goes high and switches off when it goes low. Pulse/Trig: the function turns on with one signal and switches off on the next signal (so a momentary pulse can toggle it).

Q: Can I fine-tune how an input reacts?

A: Yes, under the input's advanced settings you can set the voltage threshold, whether it should trigger on a high or low level (Active Low), and — for Trig/Pulse mode — how long the signal must be held.

Q: What are the blink/output patterns for lighting outputs, and what are they used for?

A: Steady (continuously on) — normal work lighting; Double-blink (two short blinks, repeating twice per second) — warning lights per the R65 pattern; Inferno (fast, irregular flashing) — emergency-vehicle-style marking. All units in the same function share a common timebase so lights stay in sync.

Q: Are per-output blink pattern and dim level available yet?

A: They are being moved into each function's advanced settings in the app and are not yet fully complete in either manual's current version.

Q: How do I set the current limit for an output?

A: Check what the connected product actually draws (shown live in the app) and set the limit just above that, with margin for inrush current — e.g. a light drawing 7 A could be set to 8–10 A. Make sure the cable to the load is rated for the limit you choose.

Voltage / Battery Guard

Q: What's the difference between the general battery guard and a function's own voltage guard?

A: The general battery guard ("Battery saving", set under Vehicle settings) applies to all outputs that haven't been given their own levels. Any individual function can additionally be given its own Warning voltage and Shutdown voltage, letting less critical equipment shut off earlier so more important loads (e.g. warning lights) can stay on longer.

Q: What are typical warning/shutdown voltages for a 12 V system?

A: Around 11.4 V for warning and 11.0 V for shutdown (typical defaults). These are configurable per function.

Q: Does this work the same on a 24 V system?

A: No — voltage values must be doubled for a 24 V system (roughly 22.8 V warning / 22.0 V shutdown). Using 12 V-scaled values on a 24 V system means the guard will never trigger, since the voltage never drops that low.

Q: Will outputs turn back on automatically once the battery is charged again?

A: No. After a shutdown, outputs stay off until someone deliberately switches the function back on — this is intentional, so equipment can't start unexpectedly when a charger is connected.

Sleep Modes

Q: What are the default sleep mode settings?

A: Sleep mode 1 (light sleep): after 7 hours of inactivity. Sleep mode 2 (deeper sleep): after 24 hours. Sleep mode 3 (deep sleep to protect the battery): triggers below 11.7 V. Wakeup voltage: 13.5 V, signaling the battery is charging.

Q: What wakes the unit from sleep?

A: A button press, a signal on an input, or a rise in supply voltage (e.g. the vehicle is started or a charger connected).

Q: How do I know which sleep mode the unit is waking from?

A: By the number of white blinks: 1 blink = Sleep mode 1, 2 blinks = Sleep mode 2, 3 blinks = Sleep mode 3 (low battery). If there's no activity after waking, it goes back to sleep; if there is, it returns to steady green.

Lights & Status Indicators

Q: What does a steady green light on the control unit mean?

A: Normal operation — everything is fine, no action needed.

Q: What does a blinking yellow light mean?

A: A warning — either low battery voltage or a function approaching its voltage limit. Finish what you're doing and charge the battery.

Q: What does a blinking red light mean?

A: A shutdown has occurred — either the battery guard has tripped or a function is locked out (e.g. after overload/short circuit). Charge the battery; outputs will not restart on their own.

Q: What does it mean if the button light is off vs. steady on?

A: Off = the function is off (press to turn on). Steady on = the function is on and operating normally.

Q: A single button on the panel is blinking red — what's happening?

A: That's a voltage warning specific to that function only — expect it to switch off soon; finish that task.

Q: All the buttons are blinking red — what's happening?

A: That's a battery warning for the whole system. Charge the battery as soon as possible.

Restart & Reset

Q: What's the difference between restarting and resetting a device?

A: A restart does not affect any settings — everything is retained. A reset erases everything (system link, functions, settings) and returns the device to factory-new; it must be added to the app again.

Q: How do I restart the control unit or button panel?

A: Control unit (Supply Pro / Force Box): press SW1 on the unit, or disconnect power for a few seconds and reconnect. Button panel (Switch X2 / Force Button): disconnect power for a few seconds and reconnect.

Q: How do I factory-reset a device?

A: Control unit: hold SW2 for 3 seconds until it confirms with three quick white blinks. Button panel: hold both buttons for about 5 seconds until the red light goes out. If the light goes out too early and the device isn't found in the app, restart it and repeat the reset.

Q: Do I need to reset both devices when moving to a different system?

A: Yes — a button panel that still remembers an old system can keep sending commands nobody is listening for, which is difficult to troubleshoot.

Protection & Fault Handling

Q: What protections does the control unit have?

A: Three independent, automatic protections: overload protection (software, trips at the set current limit, ~30 ms response), short-circuit protection (hardware, trips at 3x the current limit capped at 30 A, under 0.4 ms response), and the battery guard (voltage-based shutdown).

Q: An output won't turn back on — what should I check?

A: It's likely locked out after an overload or short circuit. Switch the function off and back on; if it trips again, look for the underlying fault (seized motor, chafed cable, oversized load) before raising the current limit.

Q: Can a short circuit damage the output even though protection tripped?

A: Yes, in a very severe short circuit the output stage can still be damaged, especially if the short is already present when the output is switched on. Always check the installation after cable work before switching an output back on.

Q: Does the main fuse protect the same thing as the unit's internal protection?

A: No. The unit's internal protection is much faster and protects the output itself. The main fuse's job is to protect the supply cable running to the unit, including in the event of a short circuit on an output.

Maintenance & Updates

Q: How often should I inspect the installation?

A: Regularly. Check connections and cable glands for chafing (the most common cause of tripped protection), confirm cables still exit downward with drip loops intact, and confirm the fuse is sized to the cable cross-section. Always re-check after any cable work before switching an output back on.

Q: How do I keep the system up to date?

A: Open the app, go to device settings for the control unit or button panel, and check the firmware version against the latest available in the app. Update if a newer version exists.

Troubleshooting Quick Reference

Q: System responds slowly or unevenly — what's wrong?

A: The devices are likely too far apart. Check the wireless range between them.

Q: An output switches off immediately every time it's turned on — why?

A: The current limit is probably set lower than what the connected load actually draws. Measure the load's current and raise the limit with a margin.

Q: A button lights up but the connected load doesn't work — why?

A: The output may be damaged, often after a prior short circuit. Check it with a measuring instrument, and contact service if needed.