SCD UPS mini

Offline sine wave emergency UPS

Installation manual

V1.0.1

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INTRODUCTION

WHO IS THIS MANUAL INTENDED FOR

This manual is intended for installer's and manufacturers. It is **not** intended for the end user.
A separate document should be supplied for the end user.

APPLICATION

Due to the flexibility of the UPS functions there are numerous applications where it will be able to provide emergency power when needed. The option to choose when the UPS should start and stop, and the wireless communication with our SCD door controller series provides a highly optimized and yet flexible system for emergency doors and gates. Beneficial applications amongst others are fire doors, emergency exits, security gates and doors.
Apart from the door control market the UPS is also able to provide backup power for many IT products such as small servers, office computers, routers, Wi-Fi spots etc.
Whereas most UPS' only provides a very rough, chopped up line voltage, the SCD UPS mini provides the load a *true sinusoidal AC* which makes it suitable for nearly any appliance within the rated output power.
The SCD UPS mini has been designed by highly qualified engineers at Speed Tech A/S using a very efficient yet tough topology with modern components chosen. This has allowed for a very compact design which is down to 1/4 size of most competitors.

FEATURES

- Programmable inputs and outputs.
- Robust and fast error detection.
- Wired RS485 communication.
- Wireless SCip enabling 2 way communications with Speed Tech door controls.
- Low standby consumption which enables UPS power up long time after mains failure.
- Programmable standby and wake-up behavior.
- Programmable start and stop conditions.
- Highly optimized, automated battery charging and maintenance.
- Battery supervision and defective battery alert.
- Adjustable sinusoidal AC output: 220-240V AC / 48-52Hz.
- Remote monitoring by Door-Net
- Easy firmware upgrade – enabling customized firmware solutions.

Non-emergency scenario:
The mains is routed directly to the load, in this example a SCD door controller.

Typical emergency scenario:
The mains has been interrupted and the UPS starts powering the load.

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SAFETY

DISCLAIMER

Whilst every effort has been made to ensure that the details in this manual are correct and up to date.
Speed Tech A/S cannot be held liable for any equipment damage or personal injury due to any error or omission.

SAFETY OF PERSONS

The UPS has its own internal power source (the battery).
Consequently, the power outlets may be energized even if the
UPS is disconnected from the mains AC-power source.

➢ Dangerous voltage levels are present within the UPS. It should be opened exclusively by qualified service personnel.
➢ The UPS must be properly earthed. Measurements are required to ensure that the total leakage current of the UPS and the protected equipment does not exceed 3.5 mA.
➢ The battery supplied with the UPS contains small amounts of toxic materials. To avoid accidents, the directives listed below must be observed.
  o Never burn the battery (risk of explosion).
  o Do not attempt to open the battery (the electrolyte is dangerous for the eyes and skin).
  o Comply with all applicable regulations for the disposal of the battery.
  o Batteries constitute a danger (electric shock , burns). The short circuit current may be very high.
  o Precautions must be taken for all handling; remove watches, rings, bracelets and any other metal objects, use tools with insulated handles.
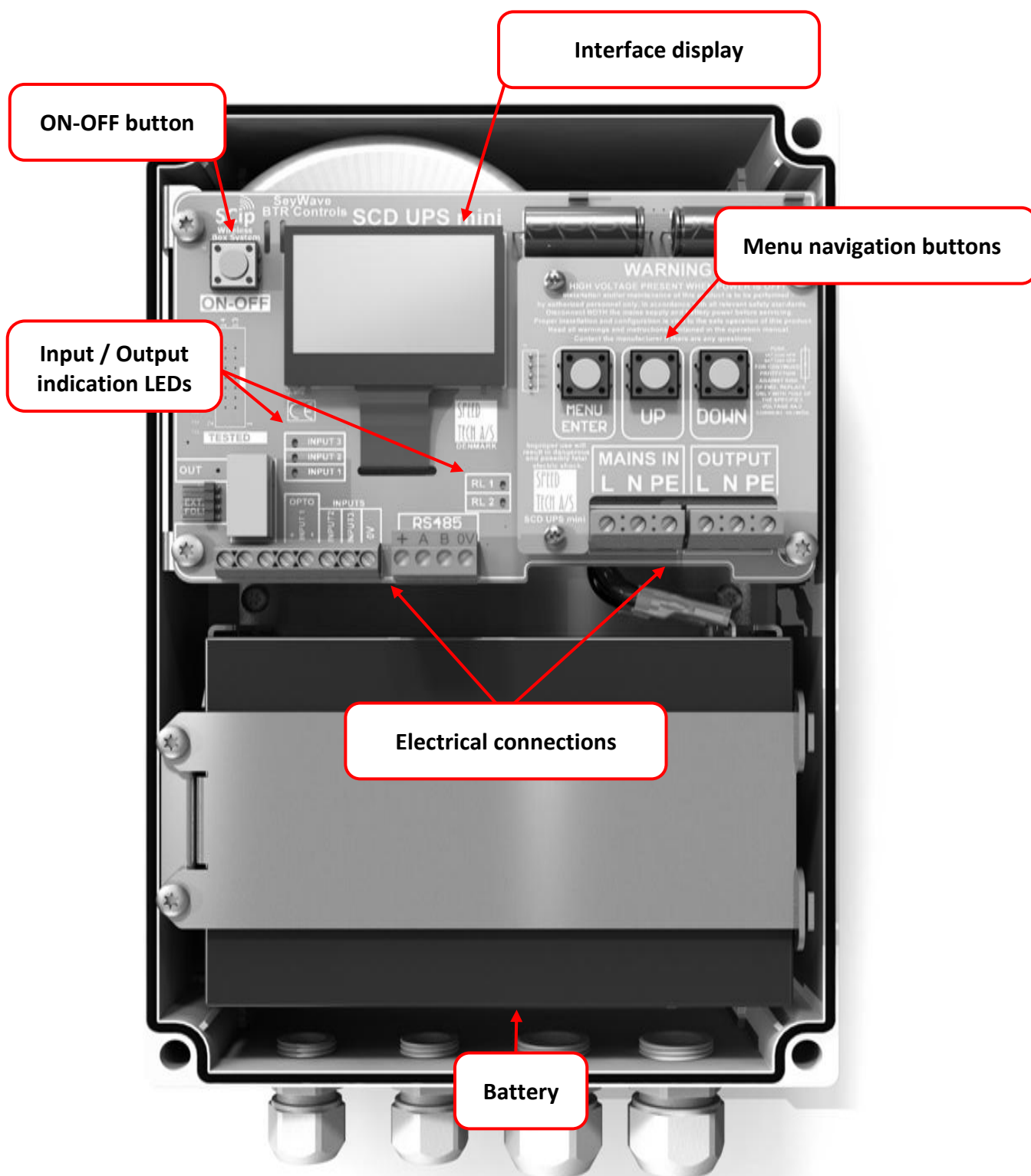
PRODUCT SAFETY

➢ The UPS connection instructions and operation described in this manual must be followed in the indicated order.
➢ UPS must be connected to a nearby wall outlet that is easily accessible. The UPS can be disconnected from the AC-power source by removing the cord.
➢ Check that the indications on the rating plate correspond to your AC-power system and to the actual electrical consumption of all the equipment to be connected to the UPS.
➢ Never install the UPS near liquids or in an excessively damp environment.
➢ Never let a foreign body penetrate inside the UPS.
➢ Never expose the UPS to direct sunlight or source of heat.
➢ If the UPS must be stored prior to installation, storage must be in a dry place with battery disconnected.
➢ The admissible storage temperature range is -25°C to +55°C

SPECIAL PRECAUTIONS

➢ Once installed and connected to the AC-power source for the first time, the battery will start to charge. Full charging to obtain the rated battery backup will require at least 4 hours.
➢ If the UPS remains de-energized for a long period it is recommended that the battery is disconnected and then reconnected and re-energized for a period of 24 hours at least every 6 months. This charges the battery thus avoiding possible irreversible damage. Ambient temperature for storing must not be less than +25°C.
➢ Do only replace the battery with one approved by Speed Tech A/S, this is vital for the safe and reliable operation of the UPS as it is designed to use only specific batteries due to important electrical parameters.

In case of doubt do not hesitate to contact our after sales department, for further information visit our website
www.speed-tech.dk

UPS MINI OVERVIEW

Interface display

ON-OFF button

Menu navigation buttons

Input / Output indication LEDs

Electrical connections

Battery

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UPS MINI OPERATIONAL STATES

Basically the UPS mini has 3 different operational states.

1. *Normal operation state* is the one the UPS will remain in the most time.
   In this state the UPS constantly maintains, charges and monitors the battery.
   If at any point an input defined as "UPS Activation" is triggered either internal (i.e. No Mains event), wired (Input 1, 2 or 3) or wireless (Stop Command or AUX Command), the UPS will change state to *active state.*

2. *Active state* the UPS will provide sinusoidal AC power inverted directly from the battery alone, either until the battery has been depleted or the configured "UPS Standby" event is triggered. The UPS will generally be able to change to this state from *normal operation state* within half a period (10mS), the delay is caused mostly because the UPS will try to activate the sinusoidal output when mains were supposed to cross 0V (zero cross).

3. *Standby state* is when the UPS is powered internally by the battery alone, awaiting either the return of mains power, or a UPS Activation event. When the mains are restored, this is physically routed directly through the UPS to its output, the UPS will then sample the mains voltage for about 5 seconds cycles to both decide whether it's reliable enough, but also to match up the output sinus with the mains input to enter *normal operation state*. In this state most of the functions such as display readout will be shut down to save power.

UPS MINI COLD START

In certain situations it is required to be able to force the UPS into *active state*, when initiated the cold start function will override the need for a UPS Activation command and activate the mains output powered by the battery. To initiate a cold start please refer to the "Maintenance" menu section.

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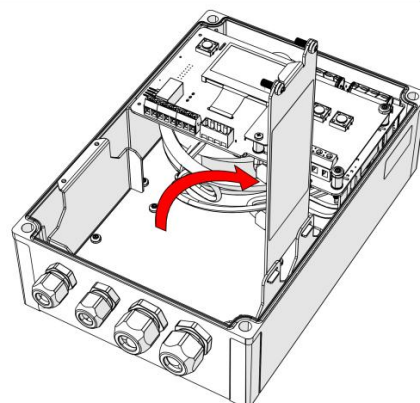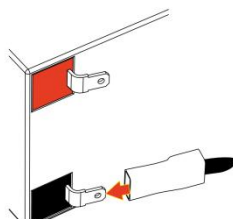
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BASIC WIRING

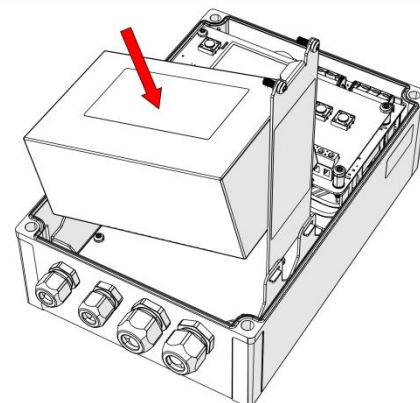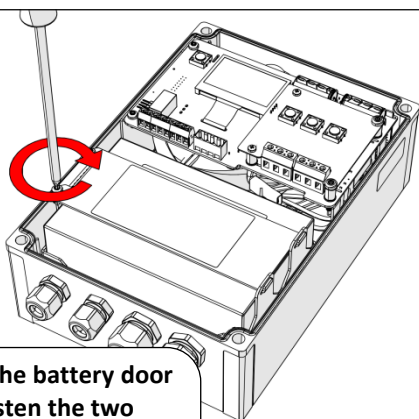### FIRST TIME BATTERY INSTALLATION

Warning!

Disconnect mains before servicing the high voltage terminals.
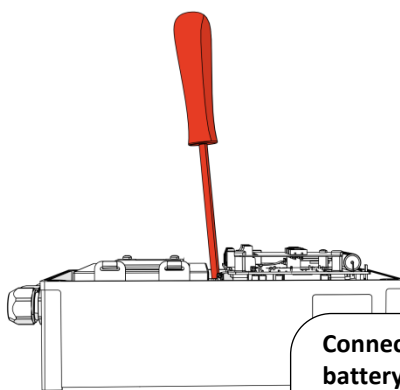
1
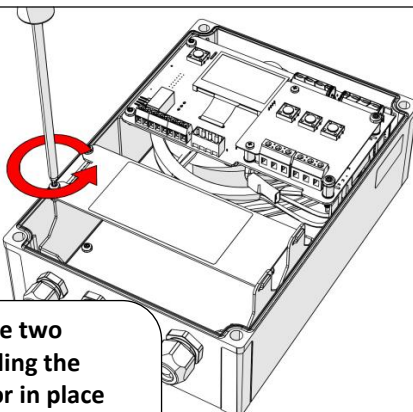
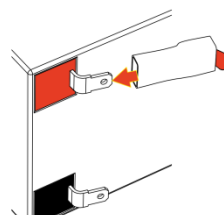Unscrew the two screws holding the battery door in place and open it.

2

Connect the black wire to the black battery terminal and insert the battery into the battery compartment.

3

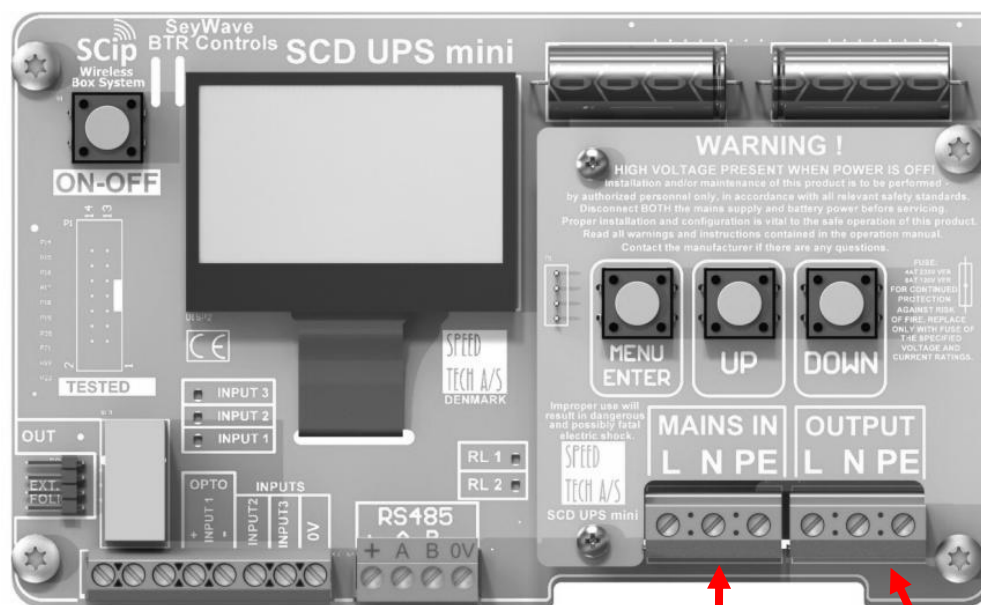Close the battery door and fasten the two screws holding it.

Connect the red battery wire using an insulated flat-head screw driver.

The UPS is now ready for operation. Charging will initiate as soon as mains power is applied.
It is recommended to let the UPS charge fully before any active UPS operation.
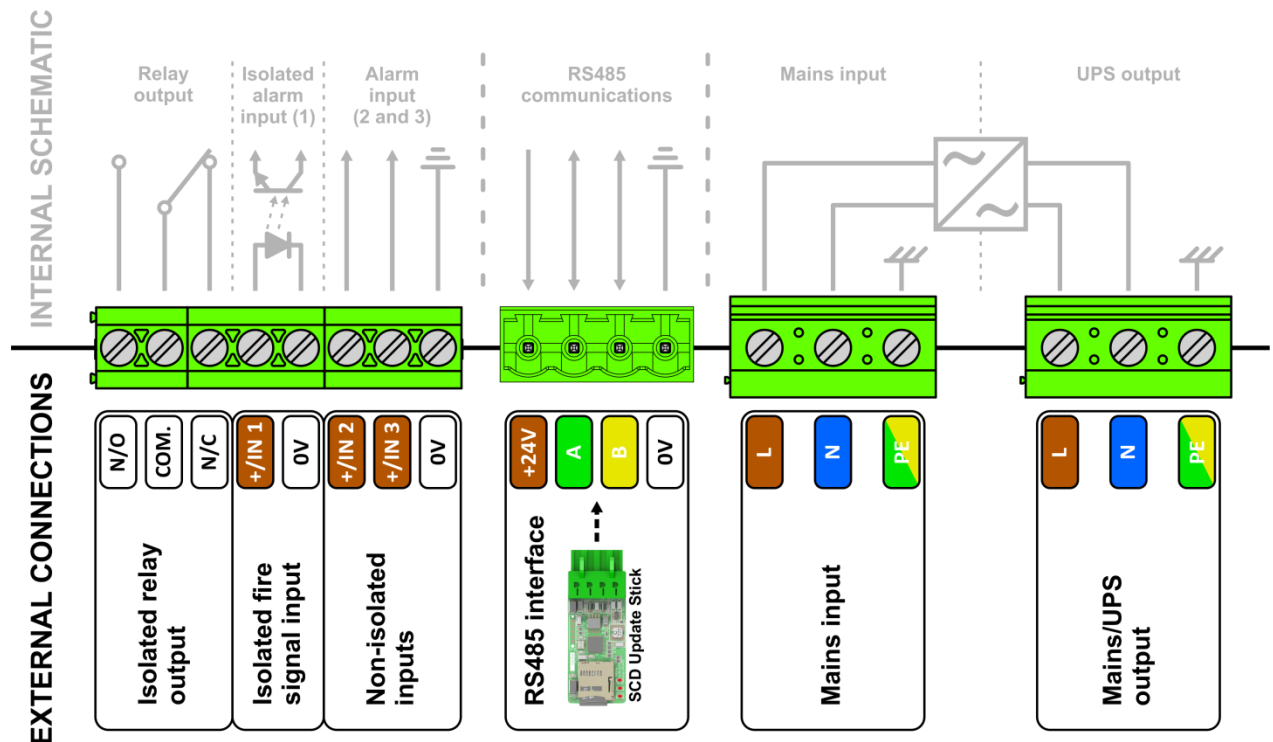
CONNECTIONS OVERVIEW

| I/O terminals | RS485 interface | Mains input | UPS output |

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CONNECTIONS DETAILED

INTERNAL SCHEMATIC

| Relay output | Isolated alarm input (1) | Alarm input (2 and 3) | RS485 communications | Mains input | UPS output |

EXTERNAL CONNECTIONS

| N/O | COM. | N/C | +/IN 1 | 0V | +/IN 2 | +/IN 3 | 0V | +24V | A | B | 0V | L | N | PE | L | N | PE |

| **Isolated relay output** | **Isolated fire signal input** | **Non-isolated inputs** | **RS485 interface** · SCD Update Stick | **Mains input** | **Mains/UPS output** |

ISOLATED RELAY OUTPUT

This output relay can be configured to various functions such as an alarm loop interrupt, i.e. make open circuit on fault such as a fire signal or mains voltage abruption.
Alternately the relay can be used to trigger an input on the SCD series door controller connected or any other external device in need of signal when the UPS is in a certain state.

ISOLATED FIRE SIGNAL INPUT

Opto-isolated fire signal input, the UPS can be set to various behaviors when this is triggered depending on the specific application.

NON-ISOLATED INPUTS

These +24V tolerable general purpose inputs can be used for alternate alarm situations the behavior of the UPS when and how these are triggered can be fully programmed by the user.

RS485 INTERFACE

Industry standard RS485 interface, primarily used for firmware update and remote monitoring via Door Net.
For communication with the SCD series door controllers the UPS mini supports wireless communications using the SCip protocol, this allows the two devices to exchange information such as state events, error codes, alarm messages etc.
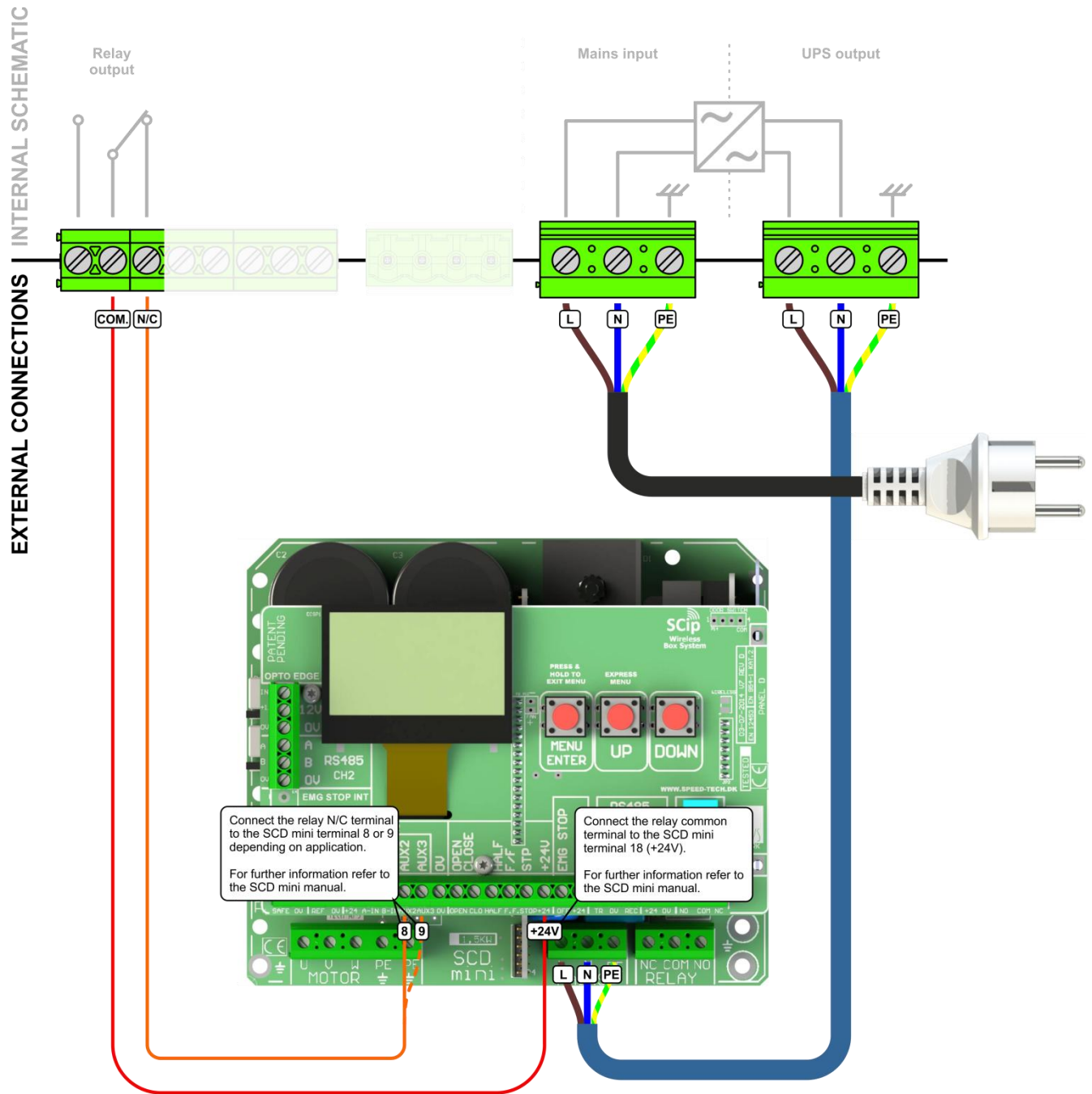
MAINS INPUT

Fused mains input accepting 110-260V AC 47-63Hz

MAINS/UPS OUTPUT

Depending on UPS state the output can either be powered from the internal battery, or directly from the mains input.
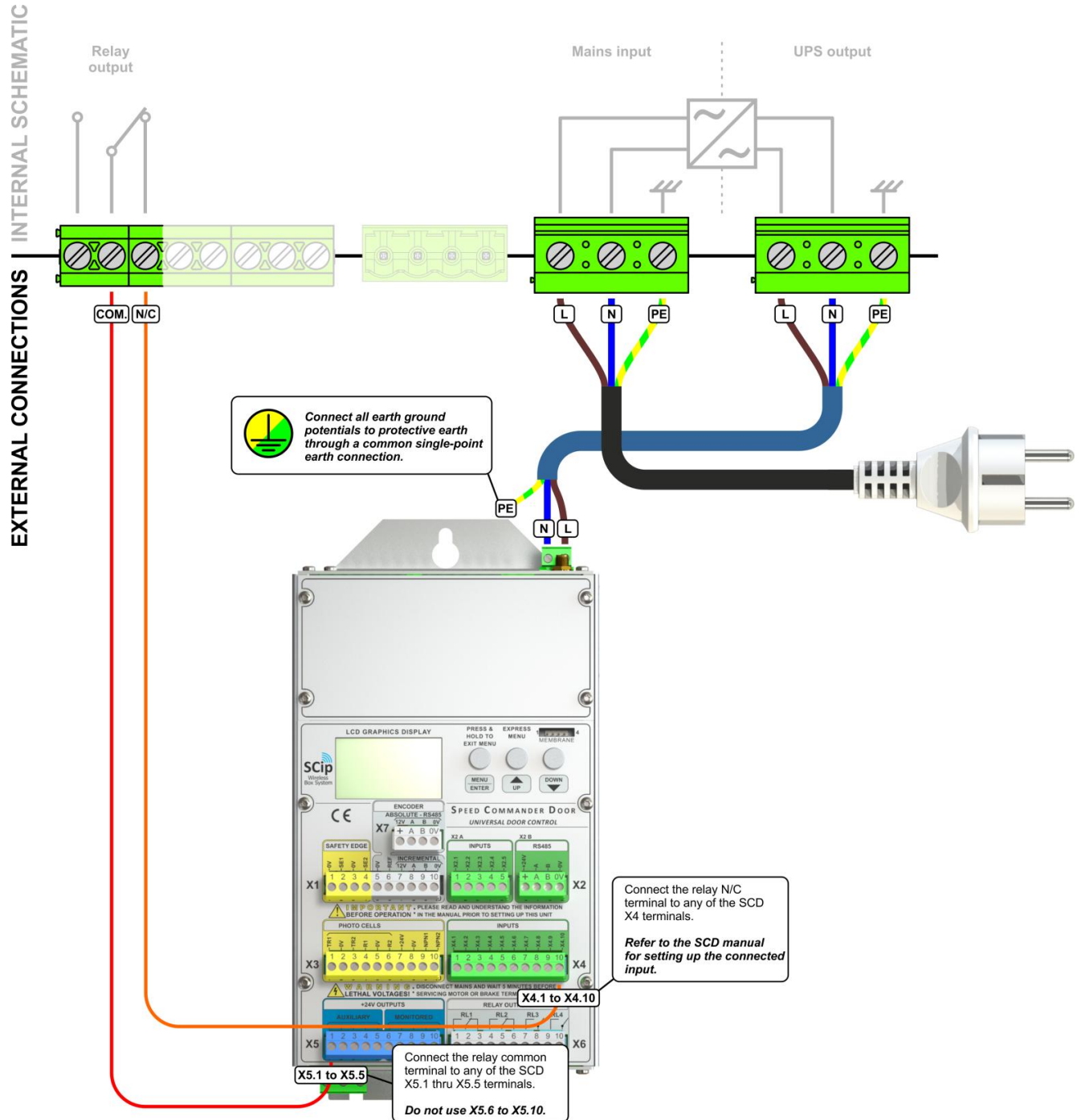
SCD MINI - WIRED

This illustration shows how to connect the SCD UPS mini to the SCD mini door controller in wired configuration.
Here the relay output on the SCD UPS mini routes +24V to the terminal 8 or 9 of the SCD mini door controller, the relay is in normally closed position which means that the input on the door controller must be set as active low.

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SCD MINI - WIRELESS

This illustration shows how to connect the SCD UPS mini to the SCD mini door controller in wireless configuration.
In this example all communication between the devices happens wirelessly.
To configure the behavior please refer to the SCD mini manuals wireless setup section.
For further information about the wireless pairing please refer to the "wireless setup" section.

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SCD - WIRED

This illustration shows how to connect the SCD UPS mini to the SCD door controller in wired configuration.
Here the relay output on the SCD UPS mini routes +24V to one of the X4 terminals on the SCD mini door controller, the relay is in normally closed position which means that the input on the door controller must be set as active low.

SCD - WIRELESS

This illustration shows how to connect the SCD UPS mini to the SCD mini door controller in wireless configuration.
In this example all communication between the devices happens wirelessly.
To configure the behavior please refer to the SCD mini manuals wireless setup section.
For further information about the wireless pairing please refer to the "wireless setup" section.

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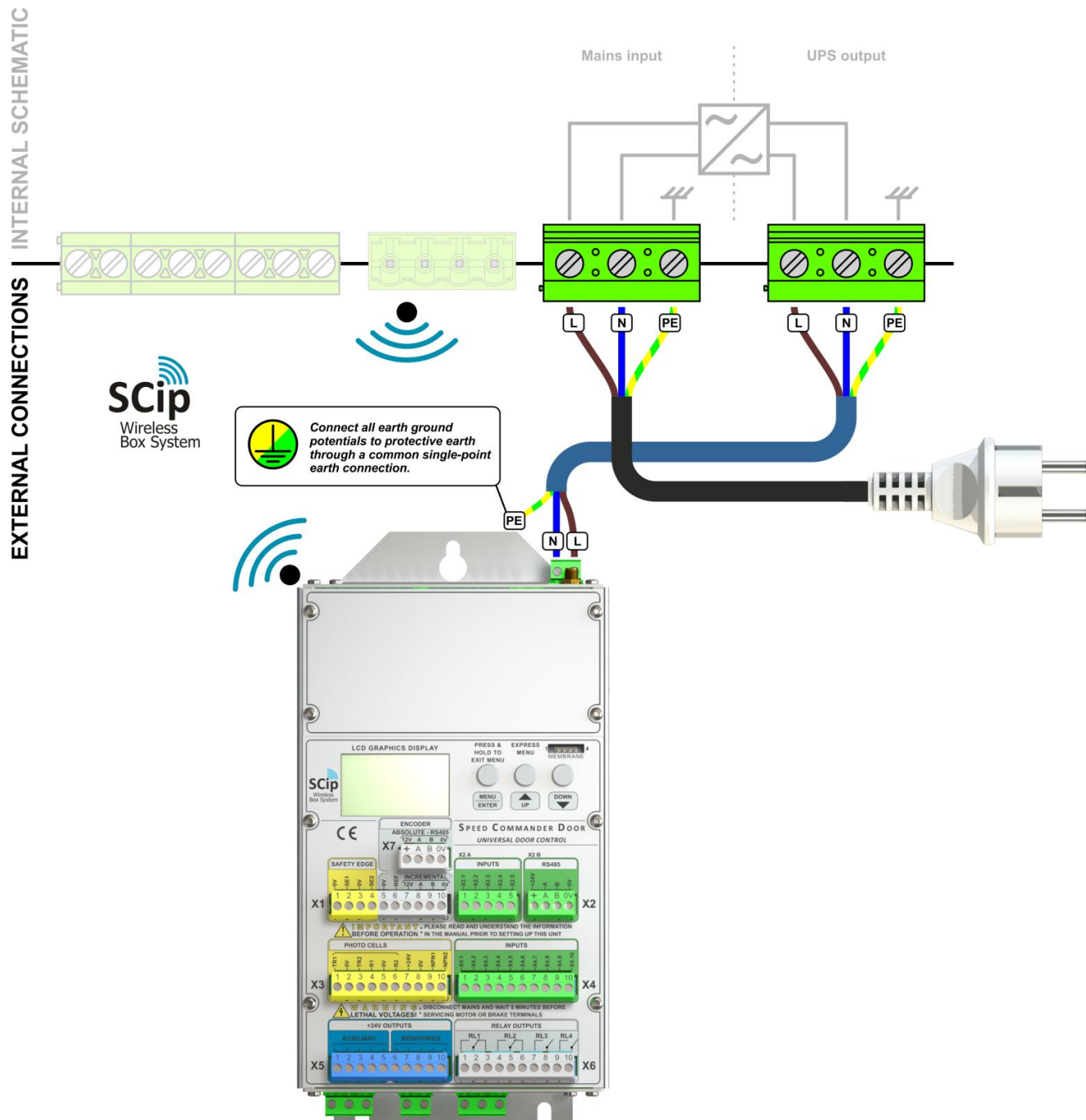
POWER UP SEQUENCE

POWERING UP

When the mains are connected the UPS will enter *power down state*, to enter *normal operation state* the ON-OFF button must be pressed and held for at least 3 seconds.
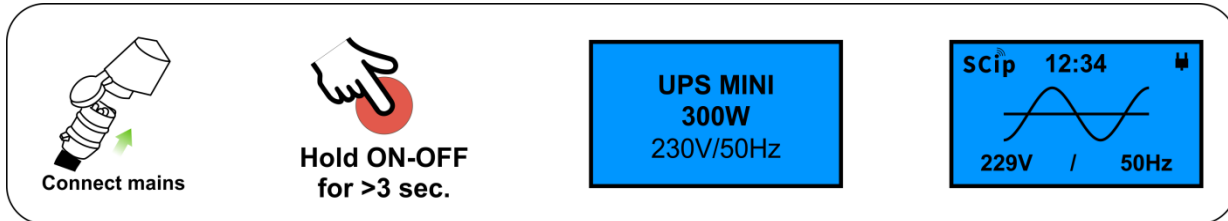

The display lights up and shows information about the model, power size and unique product no. The UPS will then sample the mains AC input for about 5 seconds to ensure that it is reliable and within the expected range before it continues to *normal operation state* and initiates charging of the battery.

During *normal operation state* the UPS will display information about the current battery capacity and the connected mains supply.

THE ON-OFF BUTTON

In any state the ON-OFF button can be used to either wake up, or set the UPS in power down state.
To wake up the UPS from power down state press and hold the ON-OFF button until the display turns on.
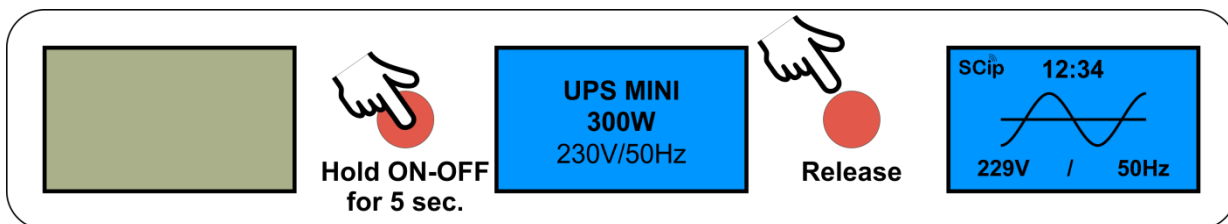
To force the UPS to enter power down state press and hold the ON-OFF button until the counter runs out and the display tells you to release the button.
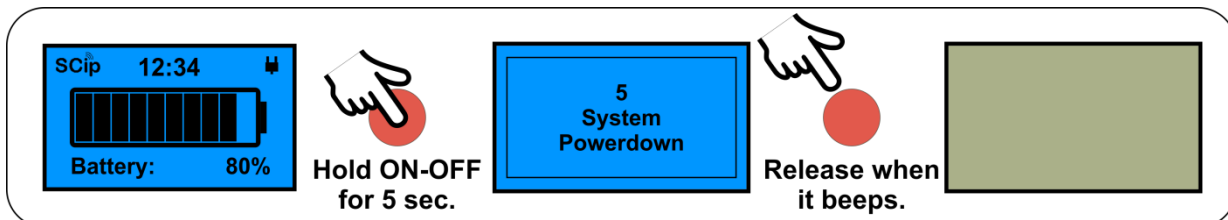

System will then enter low power standby state. If the UPS is not used for an extended period it´s recommended to disconnect the battery to prevent this from deteriorating over time. See section "Replacing the battery"

MENU SYSTEM

USER INTERFACE

The user interface consist of a graphics
LCD display, and 3 buttons which are used to navigate the internal menu system, set functions and adjust parameters.
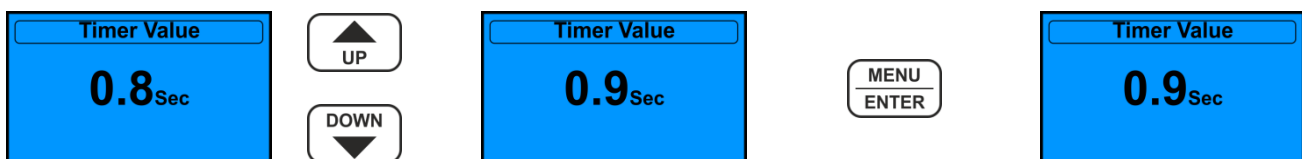

Display

Menu navigation buttons

ON-OFF button
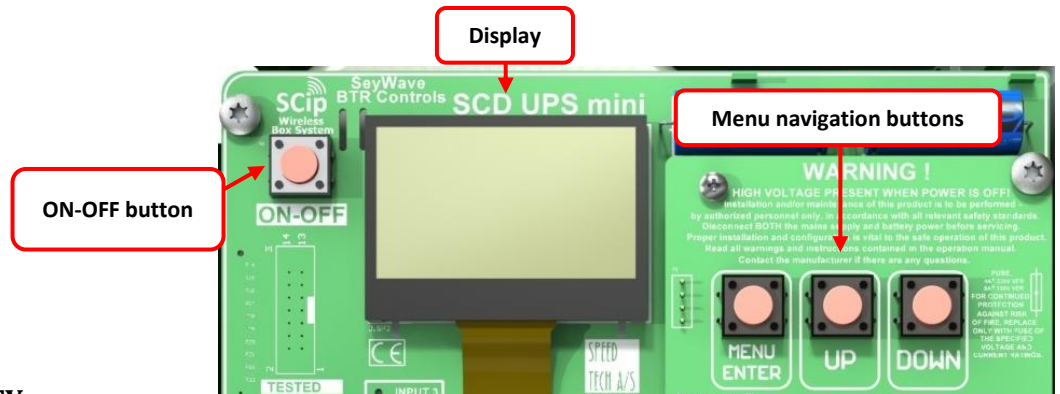
BUTTON FUNCTIONALITY

Button:	Short press Function	Long Press Function (> 2 sec)
MENU ENTER	Enter selected menu	Exit Select menu (Hold to repeat)
UP	Navigate one step UP / increase value by one step	Scroll UP
DOWN	Navigate one step DOWN / decrease value by one step	Scroll DOWN
ON-OFF		Wakes up the UPS from either sleep or low power mode. This does not activate the UPS output, that requires that you perform a "cold start" using the Maintenance menu (Depends on the conditions set in the menu "UPS Activation".

VALUES AND FUNCTIONS

Changing values:

During setup you will encounter various settings such as the below example. A timer is here configurable in 100mS intervals.

Store the changed value by a pressing MENU/ENTER.
The display shows "Stored" in the bottom line.
To exit without storing the changed value press and hold MENU/ENTER.

Selecting function:

If you enter a menu with various options such as the settings for a relay output, you will see a text list based menu.
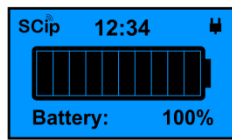Use the UP or DOWN buttons to change the selection.
Store the value by a short press at MENU/ENTER.
The inverted text illustrates the current selection, and by pressing MENU/ENTER the box next to the selection changes state confirming the change.
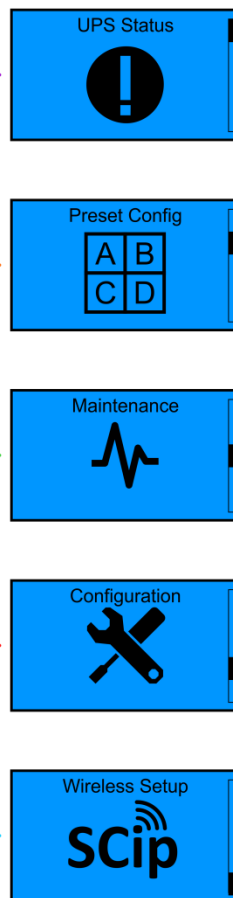
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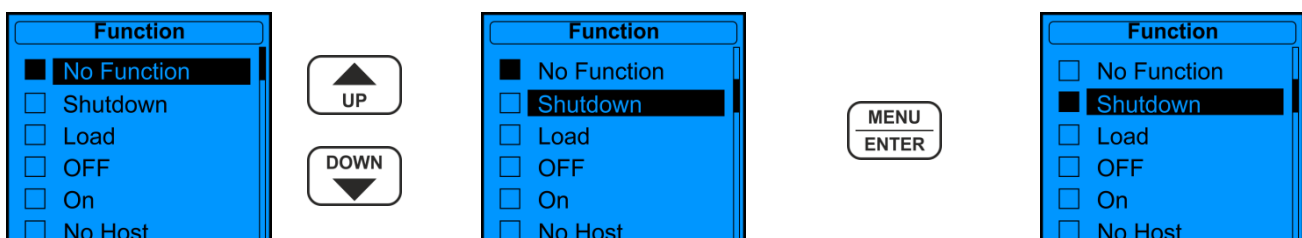
MENU TREE

Home Screen

The Home Screen:
Displays information such as current operating mode, active inputs, wireless connectivity etc. This is the default state to which the controller will automatically revert to after approximately 5 minutes of inactivity.

Main Menus

The Main Menus:
Provides all the configurable parameters necessary for setting up the SCD UPS mini.
These menus are accessed by pressing the MENU/ENTER button while the home screen is shown.

The **UPS Status menu** provides an overview of the state of all the inputs and outputs as well as battery information, fault log, temperature etc.

The **Preset Config menu** allows for selecting a predefined set of parameters allowing for quick basic setup for a specific application.

The **Maintenance menu** provides the means of performing an automatic self-test, replacing the battery or do a "cold start".

The **Configuration menu** allows for configuring of all the UPS mini functions available such as input and output functions, output voltage tweaking, start and stop behavior and timers.

The **Wireless Setup menu** allows for setting up a SCip wireless link between the UPS mini and an SCD series door controller.
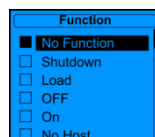
MENU TYPES

For better overview the main menus are listed as icons.
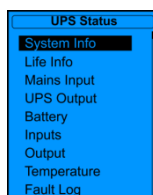
Under each main menu there are sub menus, these are displayed in a scrollable list format.

Under certain sub menus there are even further levels for configuring.

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HOME SCREEN

Because of the different states the UPS can reside, the home screen have several types of information depending on the current state. See the explanations below for further information about the information displayed.
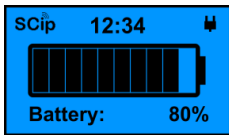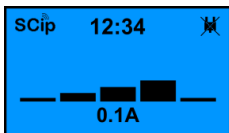
While the mains are connected the battery icon will show the current charging state. Below the battery icon the display will alternate between current battery capacity and the voltage and frequency of the mains applied. The top right icon indicates that mains is connected and within normal operating range.
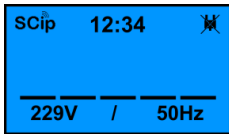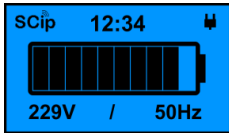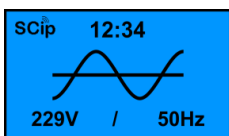
When the mains are disconnected the UPS will show the power bar illustrating the load at the output.
Below the currently measured amperage load, provided output voltage and frequency will be alternately shown.
The top right icon indicates that mains is disconnected or not within normal operating range.

When mains are reconnected the UPS will briefly show a sine wave while sampling the input voltage in order to decide if it is reliable.

Below the sine wave the voltage and frequency sampled are shown as well as the current load on the output.

ACCESS LEVEL

Some menus require a code in order to gain access. This is implemented to prevent unauthorized changes to the UPS which could result in potentially dangerous situations. When a menu is protected by an access code, a request to enter this is prompted.
Enter the correct code to get access to menu.

Code:	Description:
10	End user
110	Installer
210	Supplier
310	OEM

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MENU DESCRIPTION

UPS STATUS MENU

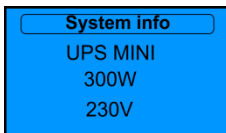| To access this menu from the home screen press	Navigate using	Select by short press	Exit by press and holding
MENU ENTER X 2	▲ UP ▼ DOWN	MENU ENTER	MENU ENTER

This menu provides an overview of the state of all the inputs and outputs as well as battery information, fault log, temperature etc.

UPS Status
- System Info
- Life Info
- Mains Input
- UPS Output
- Charge
- Battery Status
- Inputs
- Relay output
- Temperature
- Fault Log
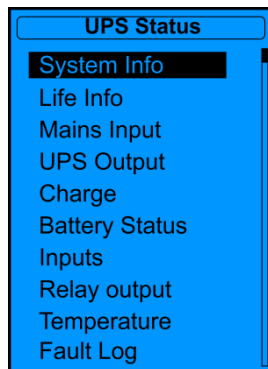
System Info:

System info
UPS MINI
300W
230V

Shows information about the model and firmware version.
Screen will flip and show unique product no and firmware version.

Life Info:

Life Info
2d: 00h
Battery Time
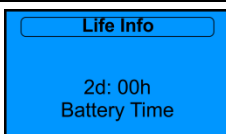
Shows information about how long the current battery has been installed, and total amount of hours the UPS has been running (all states included)

Mains Input:

Mains Input
Volt: 229VAC
Freq: 50Hz
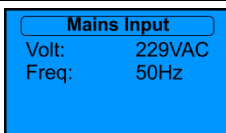
Shows information about the incoming mains voltage and frequency.

UPS Output:

UPS Output
Volt: 0VAC
Freq: 0Hz
Cur: 0.0A
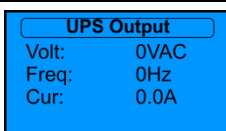
Shows UPS voltage, frequency and current load when in *active state* (providing power output).

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Battery Chg.:

```
┌─────────────────┐
│   Battery Chg.  │
│ Voltage:  11.9V │
│ Status:   Idle  │
│ Time:     0sec  │
│                 │
└─────────────────┘
```

Information about battery charging such as current voltage, charging stage and time of the current charging/maintenance. Because the battery is constantly maintenance charged the time displayed is will also tell how long ago the UPS was in fully active mode.

Battery Status:

```
┌─────────────────┐
│  Battery Status │
│ Charge:    80%  │
│ Quality:   95%  │
│ Chg. cnt.  10   │
│                 │
└─────────────────┘
```

Shows the approximate capacity, the overall quality of the battery and the times a new charging cycle has been started. This data will be cleared when the battery is replaced through a battery replacement cycle. See section "Replacing the battery".

Inputs:

```
┌─────────────────┐
│     Inputs      │
│ Input 1:        │
│ Input 2:        │
│ Input 3:        │
│                 │
└─────────────────┘
```

Shows the status of all inputs.

Relay Output:

```
┌─────────────────┐
│   Relay Output  │
│ Relay:          │
│                 │
│                 │
│                 │
└─────────────────┘
```

Shows the current output relay status.

Temperature:

```
┌─────────────────┐
│   Temperature   │
│     1019*       │
│                 │
│   690  <=OH     │
│                 │
└─────────────────┘
```

Shows the internal temperature of the UPS in raw data values.

Fault Log:

```
┌─────────────────┐
│    Fault Log    │
│    No Faults    │
│                 │
│                 │
│                 │
└─────────────────┘
```

Log of recent detected faults

PRESET CONFIG MENU

To access this menu from the home screen press	Navigate using	Select by short press	Exit by press and holding
MENU ENTER DOWN ▼ MENU ENTER	▲ UP DOWN ▼	MENU ENTER	MENU ENTER
X 1 X 1 X 1			
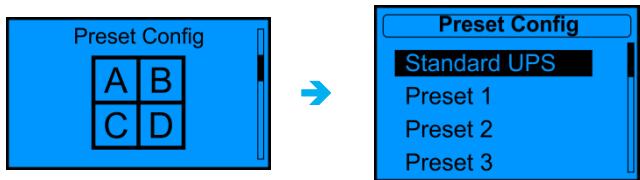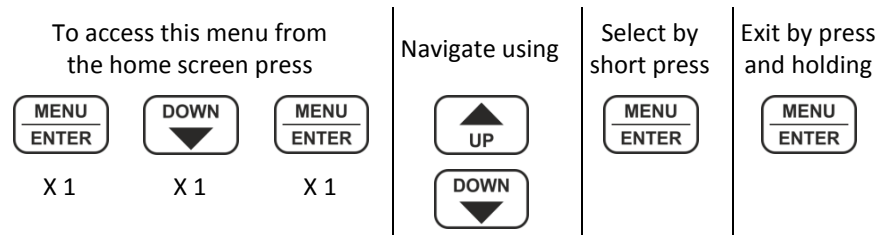
This menu allows for selecting a predefined set of parameters allowing for quick basic setup for a specific application.

Standard UPS:

Warning!
Selecting this profile will overwrite any settings related to the behavior of the UPS.

The UPS state will change directly to **active state** when the mains are interrupted and will remain in this state meaning providing power until the battery is depleted or until the mains are restored. Typically the change from normal operation state to active state takes less than 10mS. An SCD door controller connected can handle a mains interruption of up to 5 seconds, if this is in idle mode and not moving a door.

For reference this will set UPS parameters to allow the UPS to work very similar to example 1 under wireless setup examples.
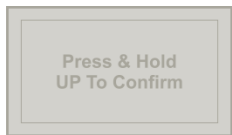
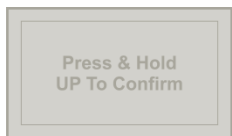Press and hold the UP button to select this profile.
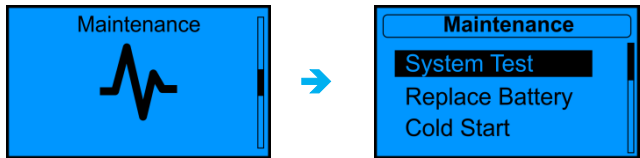
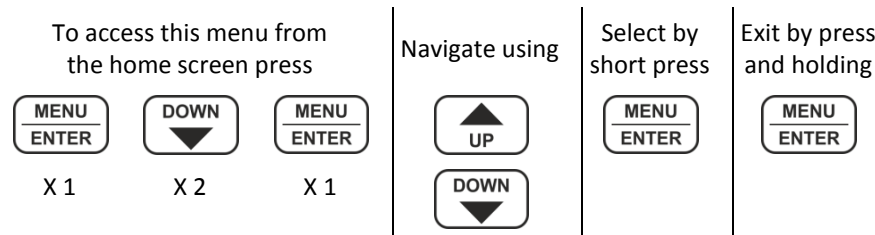Preset 1:
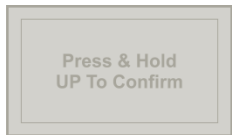
Not available yet

Preset 2:

Not available yet

Preset 3:

Not available yet

MAINTENANCE MENU

To access this menu from the home screen press

| MENU ENTER | DOWN ▼ | MENU ENTER |
| X 1 | X 2 | X 1 |

Navigate using

▲ UP
DOWN ▼

Select by short press

MENU ENTER

Exit by press and holding

MENU ENTER

Maintenance

➡

Maintenance
System Test
Replace Battery
Cold Start

This menu provides the means of performing an automatic system test, replacing the battery or do a "cold start".
Note: The system test is unavailable at the moment.

To validate the installation the UPS can perform a test cycle confirming that all functions are working as intended.

System Test:

To Initiate System Test

System Test

Not available yet

To ensure reliable operation the UPS constantly monitors the battery. When the battery does not meet the expected performance it must be replaced.

Replace Battery:

To Replace Battery

Because the UPS inherently can provide lethal voltages, simply disconnecting the mains does *not* shut it down safely.
Select this menu and follow the instructions on the display prior to replacing the battery.

Follow the "[Replacing the battery](#)*" guide closely when performing a battery replacement for both personal safety and to prevent damaging the UPS hardware*

The UPS can be forced into *active state* meaning that the AC output is turned on.

Cold Start:

To Activate Cold Start

Forces the UPS into active state with the output AC on powered by the battery.
Hold the ON-OFF button down until the timer on the display runs out to enable this.
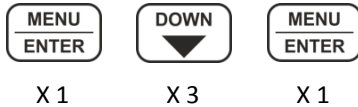
To disable the cold start and enter "normal" operation press and hold the ON-OFF button for at least 5 seconds.

To learn more about the different states please refer to the "[UPS operational states](#)" section.

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CONFIGURATION MENU

To access this menu from the home screen press
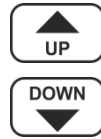
| MENU ENTER | DOWN ▼ | MENU ENTER |
| X 1 | X 3 | X 1 |

Navigate using

▲ UP
▼ DOWN

Select by short press

MENU ENTER

Exit by press and holding

MENU ENTER

Configuration
- UPS Activation
- UPS Standby
- Inputs
- Output Relay
- Timers
- Output Adj.
- System
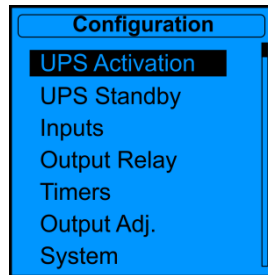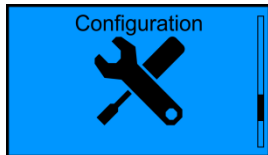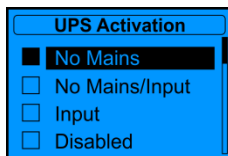
The configuration menu allows for configuring of all the UPS mini functions available such as input and output functions, output voltage tweaking, start and stop behavior and timers.

UPS Activation:

> When shall the UPS *start* providing power?

UPS Activation
- No Mains
- No Mains/Input
- Input
- Disabled

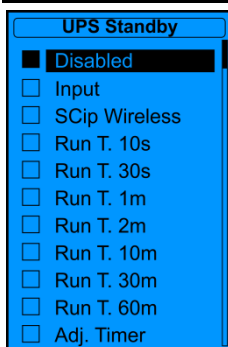| ☐ No Mains | When a mains failure is detected the UPS will change to *active state* in which the output is activated and will provide the connected load with power from the battery. |
☐ No Mains/Input	When mains failure is detected, or the input(s) configured as UPS Activation is activated.
☐ Input	When the input(s) configured as UPS Activation is activated.
☐ Disabled	UPS will not start.

UPS Standby:

> When shall the UPS *stop* providing power?

UPS Standby
- Disabled
- Input
- SCip Wireless
- Run T. 10s
- Run T. 30s
- Run T. 1m
- Run T. 2m
- Run T. 10m
- Run T. 30m
- Run T. 60m
- Adj. Timer

| ☐ Disabled | The UPS will not stop before the battery is depleted. Note, this will shorten the battery life time. |
☐ Input	When the input(s) configured as UPS Standby is activated.
☐ SCip Wireless	When instructed through the SCip wireless connection.
☐ Run T. 10s	After 10 seconds.
☐ Run T. 30s	After 30 seconds.
☐ Run T. 1m	After 1 minute.
☐ Run T. 2m	After 2 minutes.
☐ Run T. 10m	After 10 minutes.
☐ Run T. 30m	After 30 minutes.
☐ Run T. 60m	After 60 minutes.
☐ Adj. Timer	Adjustable timer, note that the value of this timer must be configured in the Timers submenu also located in the configuration menu.

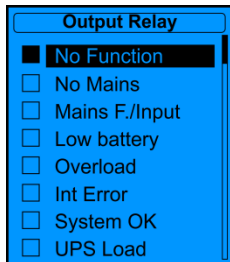> In this menu the function of the three inputs can be set as well as the logical nature of how to activate them.

Inputs:

Inputs
Input 1
Input 2
Input 3
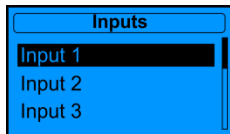
Input 1-3:

|			
Function:	☐ **No Function**		The input will do nothing.
	☐ **UPS Activation**		The input will make the UPS go into *active state* (provide power).
	☐ **UPS Standby**		The input will make the UPS go into *standby state*.
Name:	☐ **NONE**		No designation, defaults to the input name, i.e. Input 1
	☐ **Alarm Input**		Name changed to Alarm Input.
	☐ **UPS Activation**		Name changed to UPS Active.
	☐ **UPS Standby**		Name changed to UPS Standby.
	☐ **Test Input**		Name changed to Test Input.
Function:	☐ **N.C.**		The input will be triggered when there is a HIGH signal on the terminals (Normally Closed).
	☐ **N.O.**		The input will be triggered when there is a LOW signal on the terminals (Normally Open).

> Configure which event will activate the output relay, if not used the "No Function" option should be set.

Output Relay:

Output Relay
No Function
☐ No Mains
☐ Mains F./Input
☐ Low battery
☐ Overload
☐ Int Error
☐ System OK
☐ UPS Load

☐ **No Function**	Relay functionality disabled.
☐ **Mains Fail**	Relay will activate if the mains fails.
☐ **Mains F./Input**	Relay will activate if the mains fails or if an input is triggered.
☐ **Low Battery**	Relay will activate if the battery is running low.
☐ **Overload**	Relay will activate if an overload of the UPS output has been detected.
☐ **Int. Error**	Relay will activate if an internal error is detected.
☐ **System OK**	Relay will remain active as long as the system is in "OK" state.
☐ **UPS Load**	Relay will activate when a load is detected at the output.

> Here the 3 timers can be configured to a desired action and trigger time.

Timers:

Timers
Timer 1
Timer 2
Timer 3
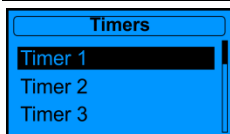
Timer 1-3:

Timer Value:			The timer value is adjusted using the UP/DOWN buttons. Save and leave the menu by pressing MENU/ENTER once.
Function:	☐ **No Function**		Timer disabled.
	☐ **No Mains**		Start timer when no mains scenario is detected.
	☐ **Shutdown**		Start timer when the UPS shuts down.
	☐ **Load**		Start timer when a load at the UPS output is detected.
	☐ **Input Activation**		Start timer when the input(s) configured as UPS Activation is activated.

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Output Adj.:

> In this menu the UPS output can be adjusted. Factory default settings are 230V/50Hz.
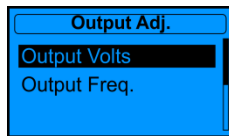
Output Adj. **Output Volts** Output Freq.	**Output Volts**	Adjust the output voltage within the range of 220 to 240V AC using the UP/DOWN buttons. Store pressing MENU/ENTER.
	Output Freq.	Adjust the output frequency within the range of 48 to 52 Hz using the UP/DOWN buttons. Store pressing MENU/ENTER.

System:

> The System menu contains various information about the system, but also gives the option to update the firmware and adjust a few UI settings.

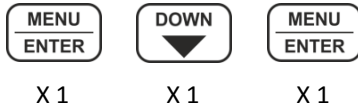|		
System **Set Time/Date** Clear Fault Log Sound Backlight Contrast F.W. Update Firmware Info Service	**Set Time/Date**	Set the time and date
	Clear Fault Log	Clears the fault log
	Sound ☐ **ON**	Enable sound.
	☐ **OFF**	Disable sound.
	Backlight	Here you can adjust the display backlight intensity.
	Contrast	Here you can adjust the display contrast levels.
	F.W. Update	To update firmware select this and follow the instructions on the display.
	Firmware Info	Information about the current firmware version.
	Service	For factory configuration, not user accessible.

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WIRELESS SETUP MENU

To access this menu from the home screen press	Navigate using	Select by short press	Exit by press and holding
MENU/ENTER X1 DOWN X1 MENU/ENTER X1	UP DOWN	MENU/ENTER	MENU/ENTER
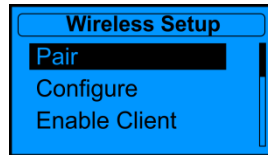
The wireless setup menu allows for connecting the UPS to an SCD door controller through the SCip wireless protocol as well as configuring the behavior of this.
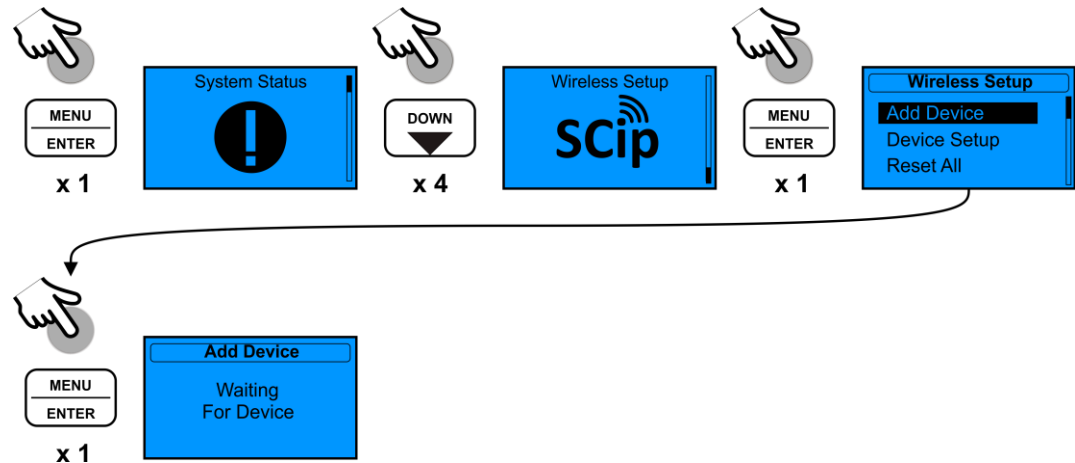
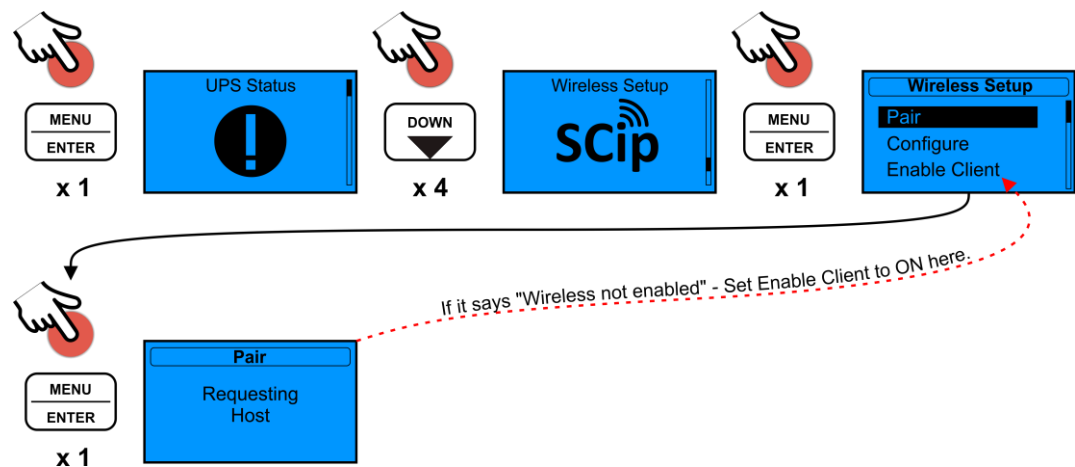The pair menu is used to wirelessly connect the UPS to an SCD door controller.

Pair

Follow these steps to pair the UPS mini to an SCD series door controller.
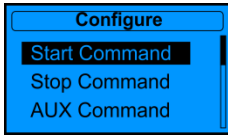
Prepare the SCD door controller:

Pair the UPS mini:

If it says "Wireless not enabled" - Set Enable Client to ON here.

The configure menu is used to configure which events triggers what door motion, and reaction to the AUX reply from the door controller.

Configure

Start Command:

The stop Command is a command the UPS sends to the door controller. Typically used to open the door, but can be configured otherwise. The configuration of what the door controller does when receiving this command is configured in the door controllers wireless menu.

☐ **No Function**	No start command is sent.
☐ **No Mains**	The start command is sent when a mains interruption is detected.
☐ **Input**	The start command is sent when the input(s) configured as "UPS Activation" is activated.
☐ **UPS Activation**	The start command is sent when the UPS changes to *active mode* (UPS Activation).
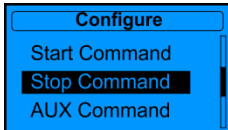
Stop Command:

The Stop Command is a command the UPS sends to the door controller. Typically used to close the door, but can be configured otherwise. The configuration of what the door controller does when receiving this command is configured in the door controllers wireless menu.

|	
☐ **No Function**	No stop command is sent.
☐ **Input**	The stop command is sent when the input(s) configured as "UPS Standby" is detected.
☐ **UPS Standby**	The stop command is sent when the UPS changes to *standby state* (UPS Standby).
☐ **Timer**	The stop command is sent when the "Stop Timer" runs out.
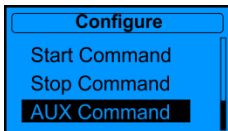
AUX Command:

The AUX Command is a command sent from the door controller to the UPS. Typically this can be used to tell the UPS to shutdown when the door has been opened or closed. Configure what activates this command in the door controller wireless menu and in this menu what the UPS does when receiving it.

☐ **No Function**	The UPS will not react to an AUX command.
☐ **Re-Start Up**	The UPS will enter *normal operating state*.

The enable client menu is used to turn on or off the SCip functionality.

Enable Client
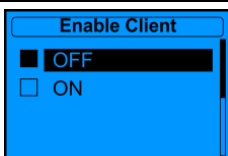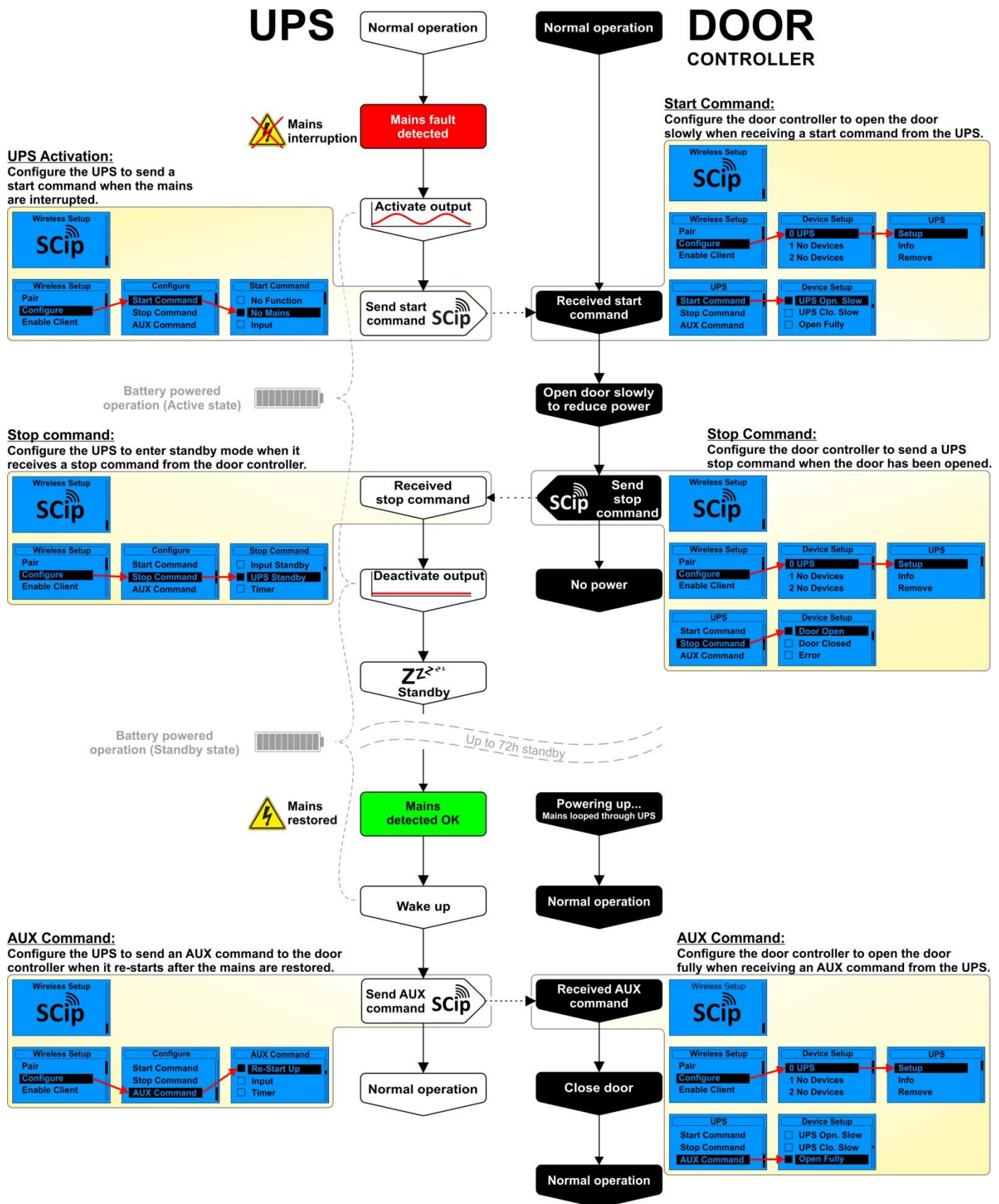
|	
☐ **OFF**	Check this to disable SCip host functionality
☐ **ON**	Check this to use external SCip host device (SCip host antenna)

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WIRELESS SETUP EXAMPLES

Example 1:
Open door when mains are interrupted and close it again when mains are restored.

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Example 2:
When mains are interrupted UPS goes into standby and awaits alarm input.
When alarm input is detected the UPS goes into active mode and opens door.

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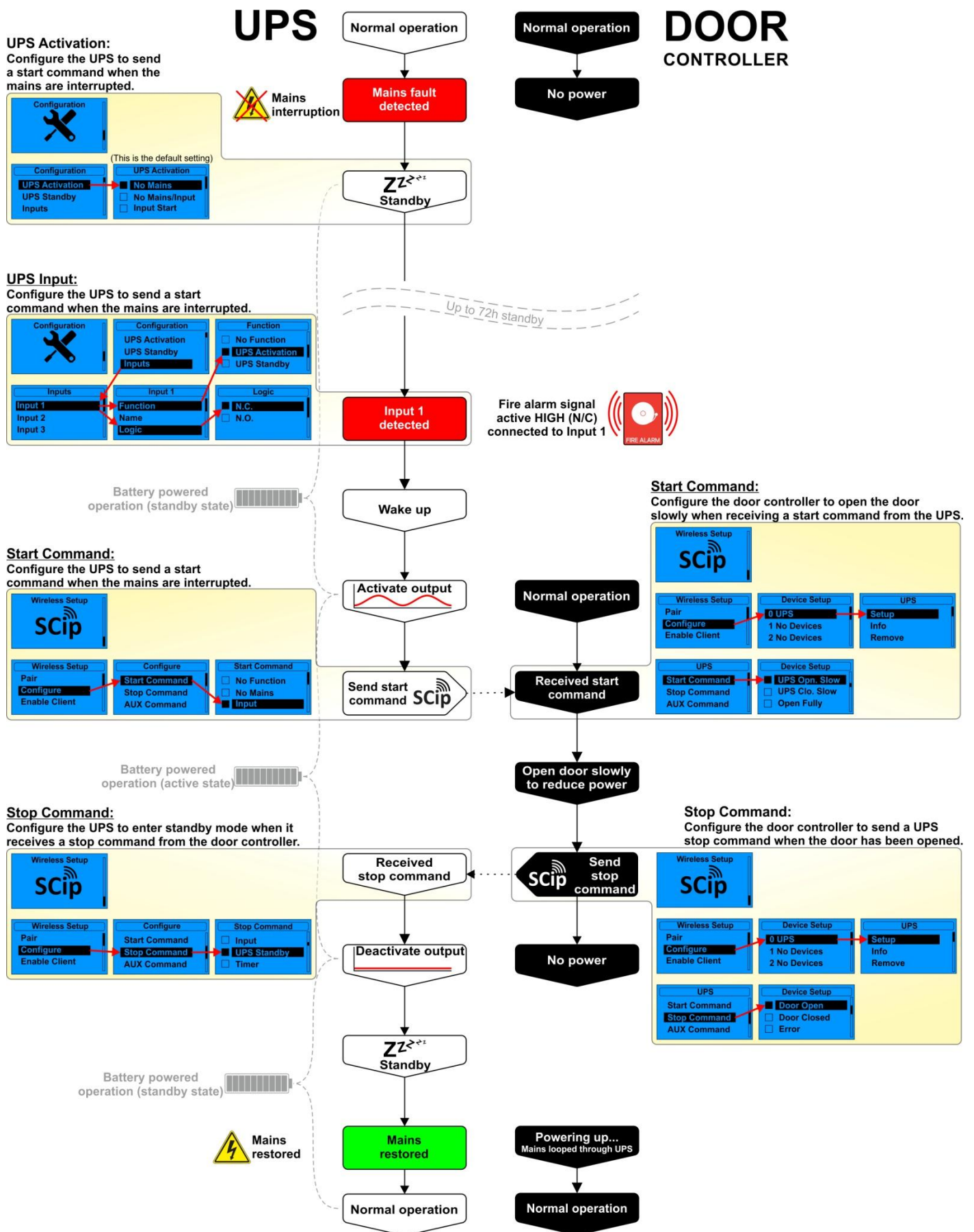
SPECIFICATIONS

PRODUCT LABEL

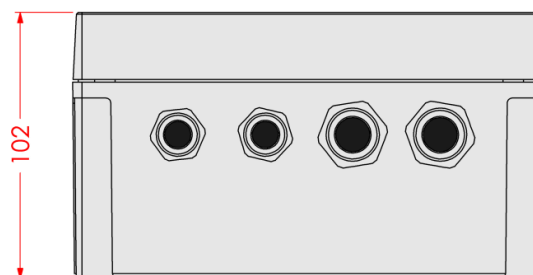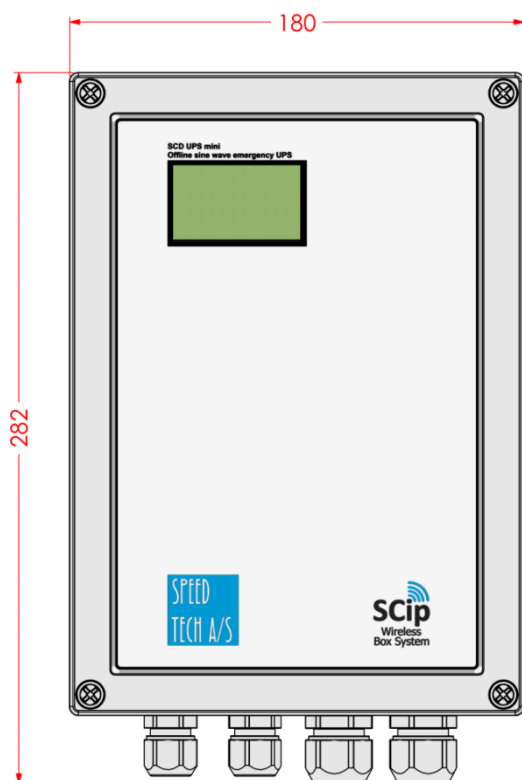The product label is located on the right top-side of the enclosure as illustrated below:
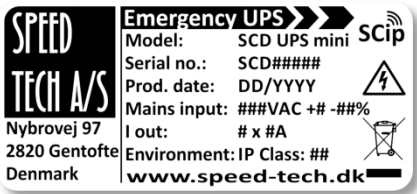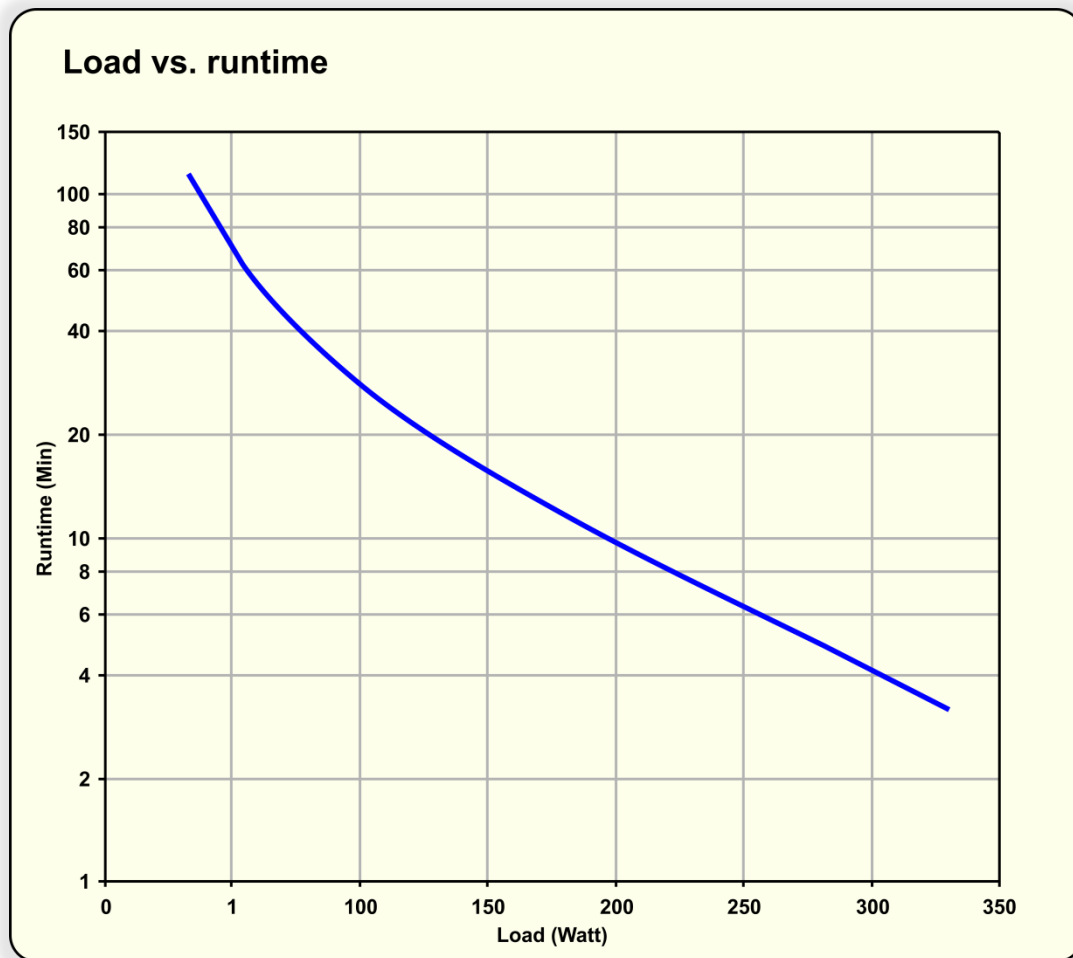

The product label contains information about model type, serial number, production date and other relevant specifications needed for identifying the product.

SPECIFICATIONS

Mains input:	**Model:**	**Voltage tolerance:**	**Frequency tolerance:**
	230V 1 phase:	200∽260VAC	47∽63 Hz
	120V 1 phase:	100∽130VAC	
Output specifications:	**Maximum output power:**	**Output power versus time:**	
	500VA / 330Watts (1 min.)	3 min.: 300 Watts	
		10 min.: 200 Watts	
		25 min.: 100 Watts	
	220 to 240VAC	Adjustable, true sinewave.	
	48 to 52Hz	Adjustable	
Battery specifications:	12V 9Ah sealed lead-acid type, **use ONLY Speed Tech recommended type.**		
Altitude:	Contact supplier for installations in high altitude locations		
IP protection:	**IP class:** **Liquids protection:** **Dust protection:**		
	54 Will withstand water splashing against the enclosure from any direction.	Ingress of dust is not entirely prevented, but it will not enter in sufficient quantity to interfere with the satisfactory operation of the equipment.	
Ambient operating temperature:	-10°C to 40°C		
Internal power supply:	12VDC		
Outputs:	**Relay output:**		
	Connections: N/O, COM. and N/C		
	Ratings: 24VDC		
Inputs:	2 x Fully configurable, general purpose inputs 12-24V tolerable (non-isolated).		
	1 x GND/0V (non-isolated).		
Safety Inputs:	1 x Fully configurable fire alarm input 12-24V tolerable (isolated).		
	1 x GND/0V (isolated).		
Communications:	1 x RS485 (SCip).		
Weight:	With battery: 6.4Kg	Without battery: 3.5Kg	

DIMENSIONS

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LOAD VS. RUNTIME

Load vs. runtime

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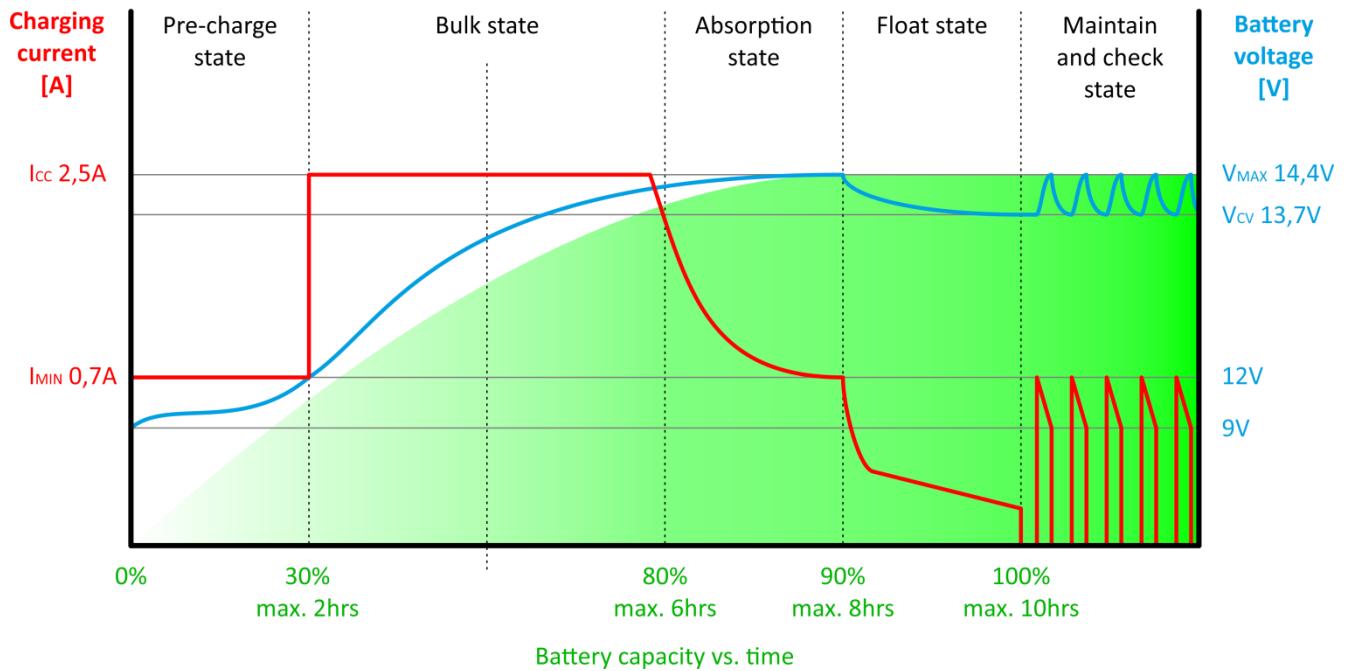## BATTERY CHARGING SCHEME

Below is illustrated the charging stages the UPS subject the connected battery to. This method of charging and maintaining a lead acid battery is commonly validated as the right way to take care of such and will result in the longest lifetime of the battery.

Battery capacity vs. time

Because the UPS monitors the battery health constantly, it is also able to tell when the battery does not meet expected performance requirements. When this happens, as it will in time no matter how well it is maintained, the UPS will alert the user to replace the battery to ensure that the power required in an emergency situation is available.

If the UPS is not used for prolonged periods of time it should be safely stored in a dry place at an ambient temperature of -25°C to +55°C. It is recommended to connect mains power at least once every 6 months and let the UPS fully charge the battery which takes approximately 10hrs.

Storing replacement batteries must be done in the same manner as above.

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APPENDIX

DECLARATION OF CONFORMITY

According to EC-Machinery Directive 2006/42/EC

Manufacturer: Speed-Tech A/S
Address: Nybrovej 97, DK-2820 Gentofte, Denmark, www.speed-tech.dk

Herewith declare under solo responsibility that the Speed Commander Door controller with type markings:
Serial number: SCD UPS mini 123456 [000000....999999]

EN 61800-3   Product Standard for power drive system.

EN 61000-6-3   Electromagnetic compatibility (EMC) – emission.
EN 61000-6-2   Electromagnetic compatibility (EMC) – immunity.

EN 12453   Safety in use of power operated doors - requirements.

EN 13849-1:2006   Safety of machinery -- Safety-related parts of control systems.
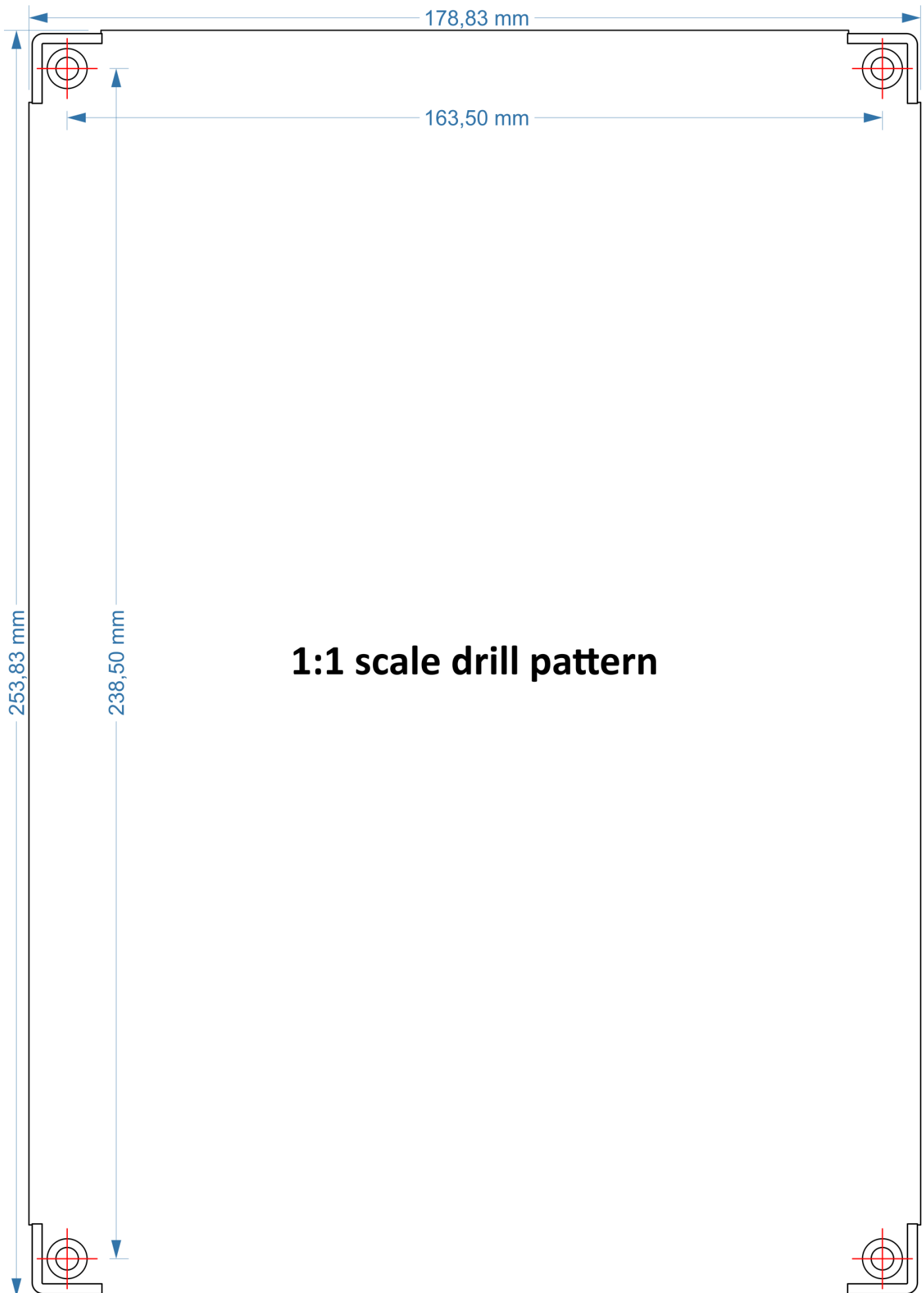   Part 1: General principles for design

EN 60335-1   Safety of household and similar electrical appliances.

And is conformity with Low voltage directive 2006/95/EC and EMC directive 2004/108/EC.
The manufacturer furthermore declares that it is not allowed to put the equipment into service until the machinery into which it is to be incorporated, or of which it is to be a component has been found and declared to be in conformity with the provisions of the Directive 2006/42/EC and with national implementing legislation, i.e. as whole, including the equipment referred to in this Declaration.
Speed-Tech A/S, DK-Gentofte, September 2011
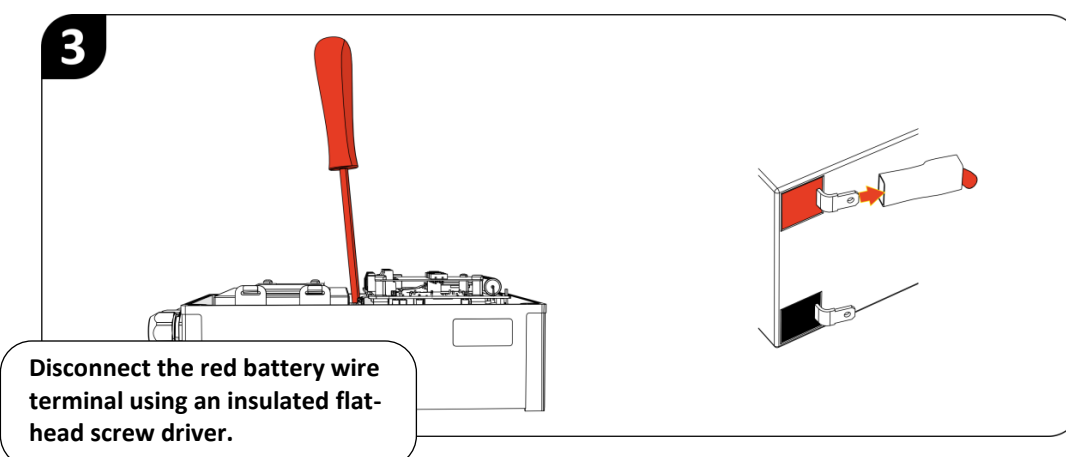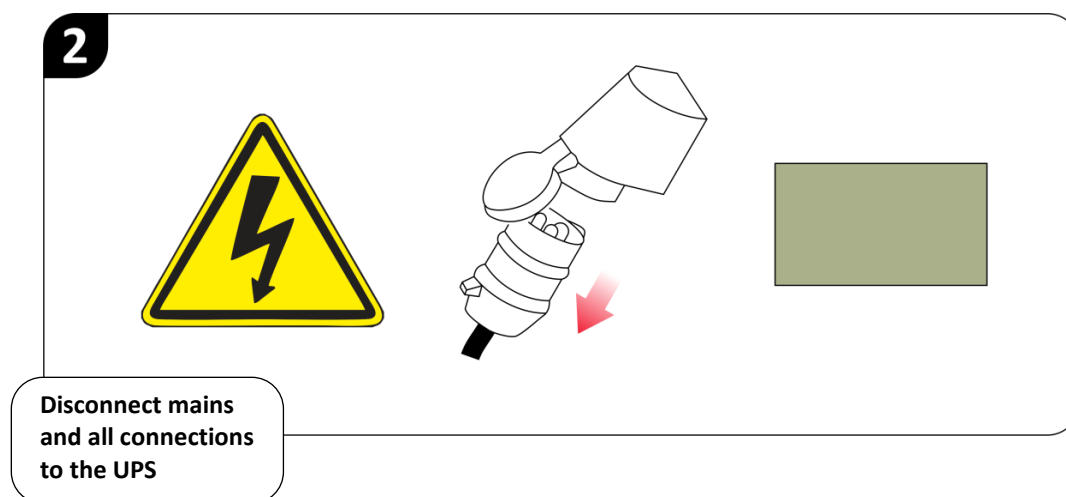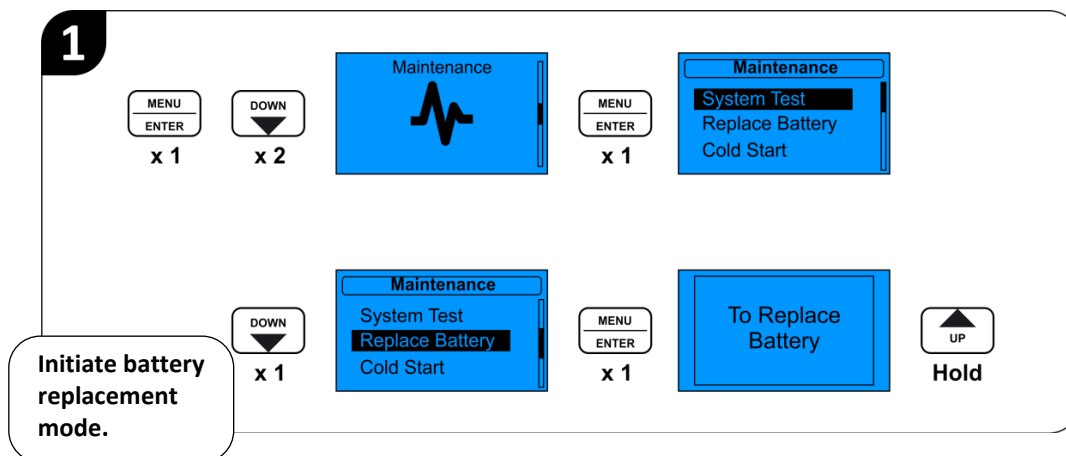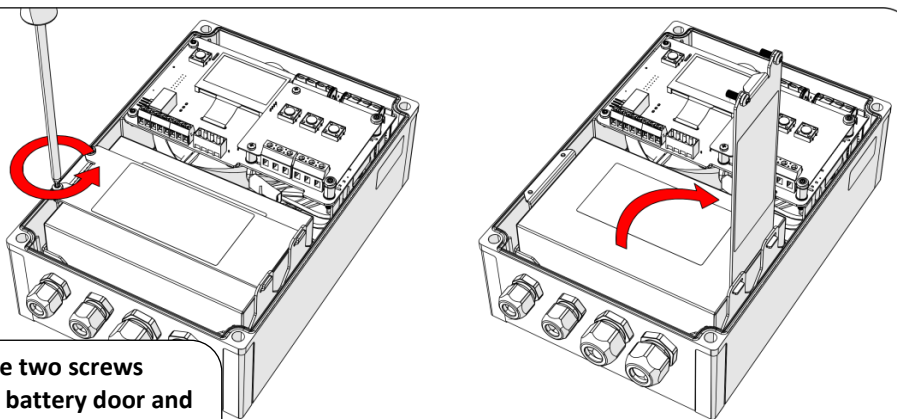
_____
René Jørgensen, President

178,83 mm

163,50 mm

253,83 mm

238,50 mm

1:1 scale drill pattern

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ERROR CODES

Error Code:	Cause:	Detailed	Check:
"OU"	Mains input is too high	Mains supply is above 265V AC	Mains voltage
"OL"	Extended overload	Battery voltage measured below 8.5V during UPS active mode	If connected load is shorted or en any way faulty
"OL1"	Output voltage heavy overload	Output voltage below 90V AC	
"OL2"	Output voltage low	Output voltage below 190V AC	
"OL3"	Output directly shorted	Output voltage below 20V AC	
"OH1"	Enclosure overheat		Check ambient temperature
"OH2"	Inverter overheat		
"FAN"	Fan Error - Current too high or low	Measurement of inverter fan current below threshold.	
"BAT"	Battery has dropped below 11.0 Volts		
"BAT1"	Battery end of life		
"BAT2"	Battery not present or defective		
"BAT3"	Error during charging battery		
"BAT4"	Timeout during charge		
"HE0"	Radio verify error		
"HE1"	Hardware error - Transformer match		

REPLACING THE BATTERY

Remove used battery:

Initiate battery replacement mode.

Disconnect mains and all connections to the UPS

Disconnect the red battery wire terminal using an insulated flat-head screw driver.

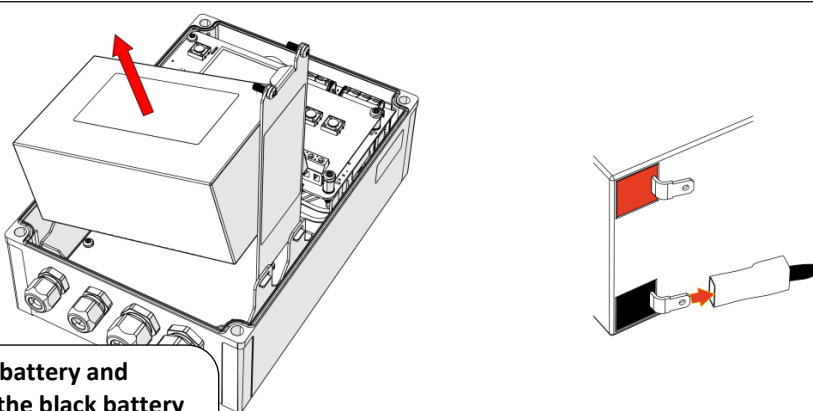**SCD UPS mini rev. A. Standard HW manual V 1.0.1**

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Unscrew the two screws holding the battery door and open it.

5

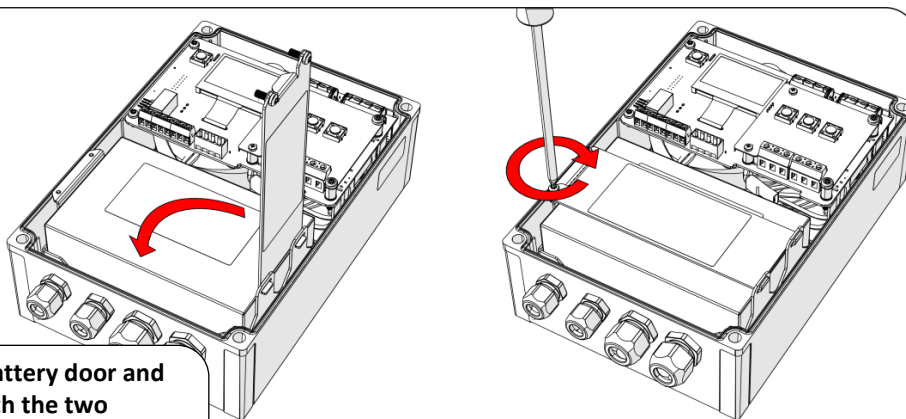Lift out the battery and disconnect the black battery wire terminal.
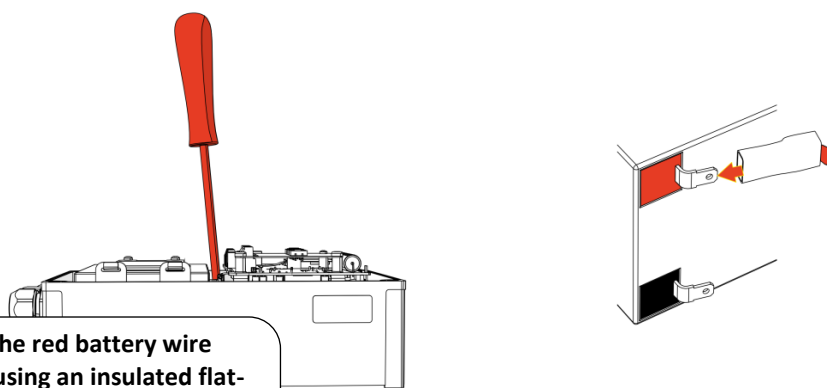
Install the new battery:

6
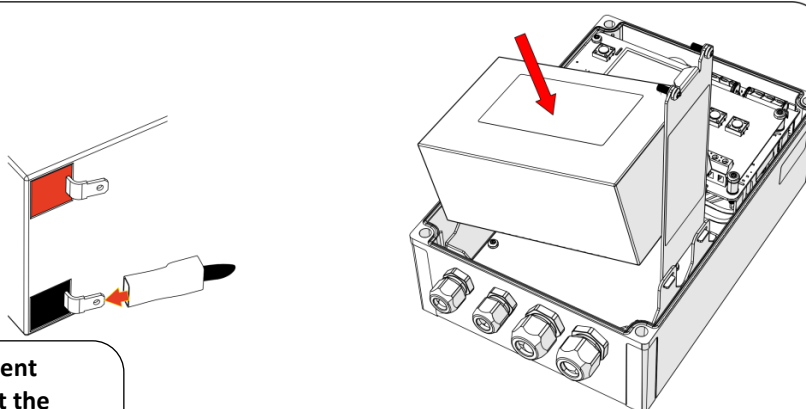
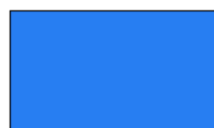Insert the replacement battery and connect the black battery terminal wire.

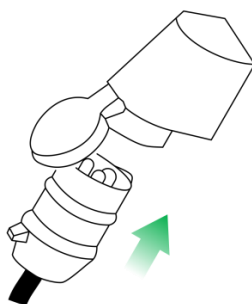**SCD UPS mini rev. A. Standard HW manual V 1.0.1**

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7

Close the battery door and fasten it with the two screws.

8

Connect the red battery wire terminal using an insulated flat-head screwdriver.

9

Connect all wires to the UPS and then connect mains supply. Press and hold ON button to start normal operation again.

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CHANGE LOG

Revision:	Description:	Initials:	Date:
V1.0.0	Initial version	AC	21-07-2016
V1.0.1	Replace battery section updated	AC	21-09-2016