

# *podis*<sup>®</sup> UPS 48 V/17Ah

34.233.0100.0

UPS Lighting Cabinet - podis<sup>®</sup> USV\_230\_048\_15

Uninterruptable Power Supply Cabinet for Wind Tower Lighting

## **Manual**

Description of product and use

Last updated: 02/2020 (Rev. F)

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# Manual information

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Dear customer,

We congratulate you on your purchase of the **podis**<sup>®</sup> UPS. This device was developed according to the state of the art with regards to the power supply in the event of power failure.

Just a few of the performance features of the series are listed below:

- pluggable, uninterrupted power supply (UPS) ready for connection
- Robust housing with IP 65 protection class (breathers are IP43)
- Suitable for low temperatures through integrated heating
- Maintenance-friendly central battery installation

In order to learn more about the system, familiarize yourself with this manual. It contains all of the information and help settings required for proper operation of the **podis**<sup>®</sup> UPS. If you still have questions or need additional help, our technical experts will be happy to assist you using the contact options listed.

Wieland Electric Inc.  
2889 Brighton Road  
Oakville, Ontario L6H 6C9  
Canada

## **Hotline for technical support**

Contact person for: Technical questions regarding accessories, function, product properties, and usage options

Phone: 1-800-943-5263

E-mail: [technical.support@wieland-electric.com](mailto:technical.support@wieland-electric.com)

## **Sales hotline**

Contact person for: delivery options, delivery times and prices

Phone: 1-800.943-5263

E-mail: [technical.support@wieland-electric.com](mailto:technical.support@wieland-electric.com)

## 1 About this manual

This manual will support you during installation, commissioning, and project planning of the **podis**<sup>®</sup> UPS. We provide information on how the devices are commissioned and operated.

This document contains the information necessary for proper use, technical data, and descriptions of parameters and objects for the projects described therein. It describes the **podis**<sup>®</sup> components, their parameterization and commissioning, the technical features, and usage and boundary conditions.

### 1.1 Target groups and qualification of personnel

Commissioning and installation of components should only be carried out by specialized technicians. The legal and valid regulations for such types of installations must be considered.

Therefore, the system manual is targeted at the following:

- Those who can verify that they have the corresponding training and already have corresponding basic knowledge of commissioning UPS systems.
- Electricians


## 1.2 Presentation of safety-relevant information

Information that warns of personal injury or property damage are emphasized by safety instructions.

### Warning of personal injury

Safety instructions that warn of personal injury are indicated by the signal word **DANGER**. Failure to observe can cause serious health effects or even death.


Example:

|  <b>DANGER</b>   |
|---|
| <ul style="list-style-type: none"><li>• Only electricians may install and commission this device. You must have read these instructions and understood them before carrying out the work.</li><li>• Do not open the device. Do not introduce any foreign objects. Keep device away from water and fire.</li><li>• Only connect or disconnect the device when the device is de-energized.</li><li>• The relevant standards, guidelines, regulations and provisions of the respective country must be observed.</li></ul> |

### Warning of property damage

Text that warns of property damage is indicated by the signal word **CAUTION**.

Example:

|  <b>CAUTION</b> |
|--|
| <p>In the event of damages, contact your Wieland sales representative or authorized dealer.</p>  |

## 2 System overview

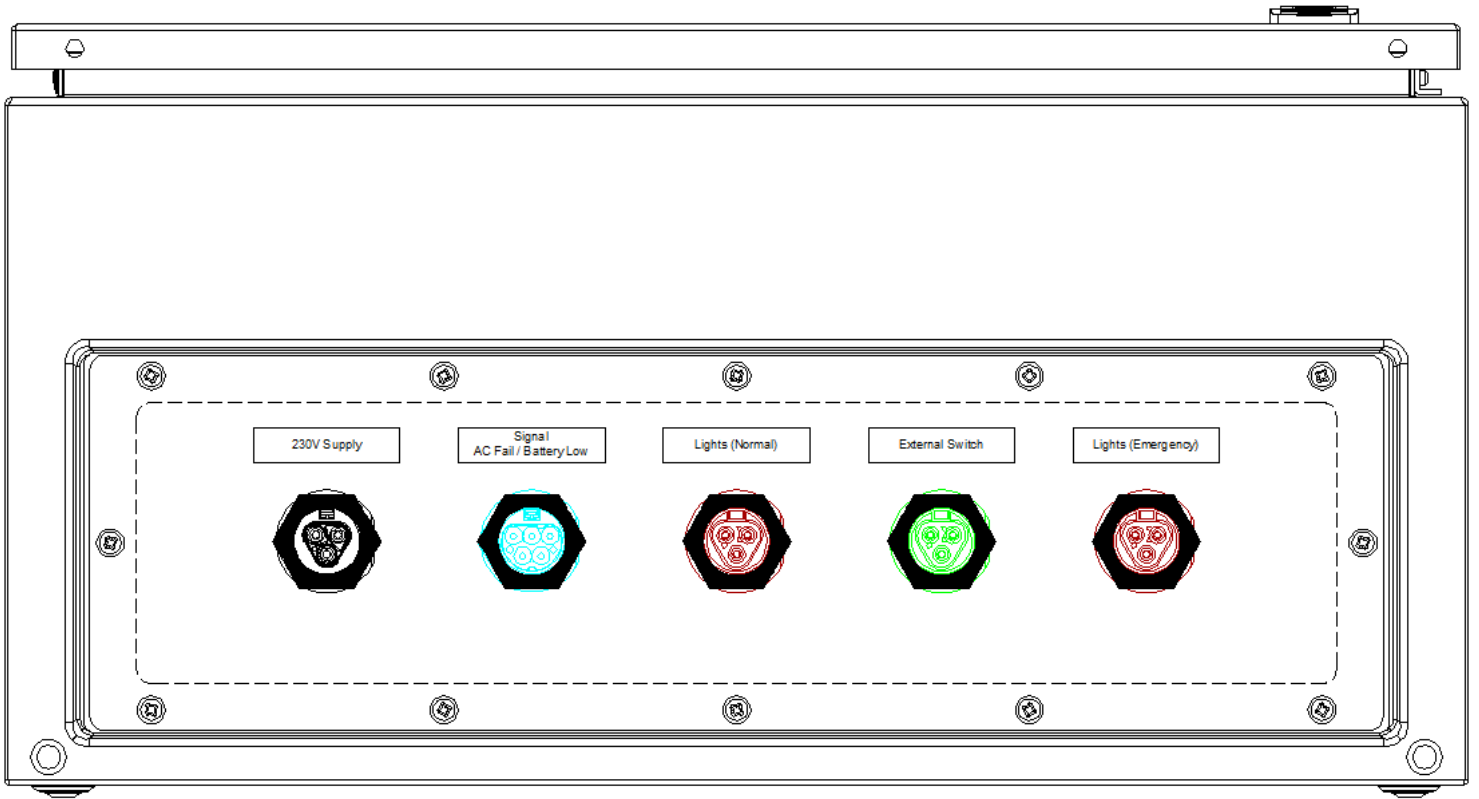
The *podis*® USP is a pluggable energy storage. It consists of a robust housing and includes all components that are necessary for the emergency operation of a buffered extra low voltage circuit. The UPS can be connected by way of RST® connectors to the power supply. The outputs are pluggable in the same way.

### 2.1 View of the open housing

Front view, 17 Ah UPS



View from below





## 2.2 Technical data

Approvals



### General

|  |  |
|--|--|
| Cabinet Dimensions (WxHxD in mm)             | 500 x 600 x 260  |
| Weight                                       | 59 lbs (Excluding batteries)<br>114 lbs (Including batteries, approximate)   |
| Cabinet material                             | Steel, powder coated   |
| Cable type of internal wiring (Power wires)  | TEW, 600V, 105°C, 14 AWG (18AWG for signals (XS2 & XB3))                     |
| Mounting system                              | Wall mount brackets  |
| Degree of protection                         | IP43 (total)<br>Cabinet is IP66<br>Connectors are IP69<br>Breathers are IP43 |
| Operating Temperature range                  | -20 to +45 °C  |
| Color  | RAL 7035   |
| Connector, supply voltage                    | RST20i3 black male   |
| Connector, output voltage (Comfort Lights)   | RST20i3 brown female   |
| Connector, output voltage (Emergency Lights) | RST20i3 brown female   |
| Connector, signal                            | RST20i5 light blue, male   |
| Connector, switch                            | RST20i3 green female   |

### Electrical Data

|  |  |
|--|--|
| Supply voltage   | 230Vac   |
| Frequency  | 47 - 63 Hz   |
| Output voltage   | 48 V DC (Nominal)  |
| Output current (Derating may apply at higher temperatures) | 10A for Comfort Lights Channel<br>10A for Emergency Lights Channel |
| Batteries (not included)                                   | 4 x 12Vdc, 17.2Ah, series connected (Yuasa NP18-12 or similar)     |
| Battery type   | lead acid (AGM, VRLA)  |
| Blinking mode during battery operation                     | Blinking mode with 10 seconds on, 1 second off                     |

### 3 First commissioning

When commissioning the *podis*® UPS for the first time, check the housing for visible damage. Open the housing to assess the components and wiring.

#### CAUTION

Observe IEC 61439:

Inspection of the switchgear combination is necessary after transport; cf. IEC/EN 61439. After set-up and before commissioning, the connection screws and terminal blocks of the power rails and switch-gears must be inspected to ensure they are not loose and, if needed, tightened with the recommended tightening torque. In the event of modifications and/or additions, the guaranteed properties can be fulfilled only when observing the associated accompanying documents. A corresponding update to this documentation is, therefore, essential to the builder/manufacturer.

The housing, the components and the wiring must not have

- damages to the housing, cables or components
- open cables or cable ends
- loose components

All housing openings must be closed with breathers or connectors.

#### NOTE

In the event of damages, contact your Wieland sales representative or authorized dealer.

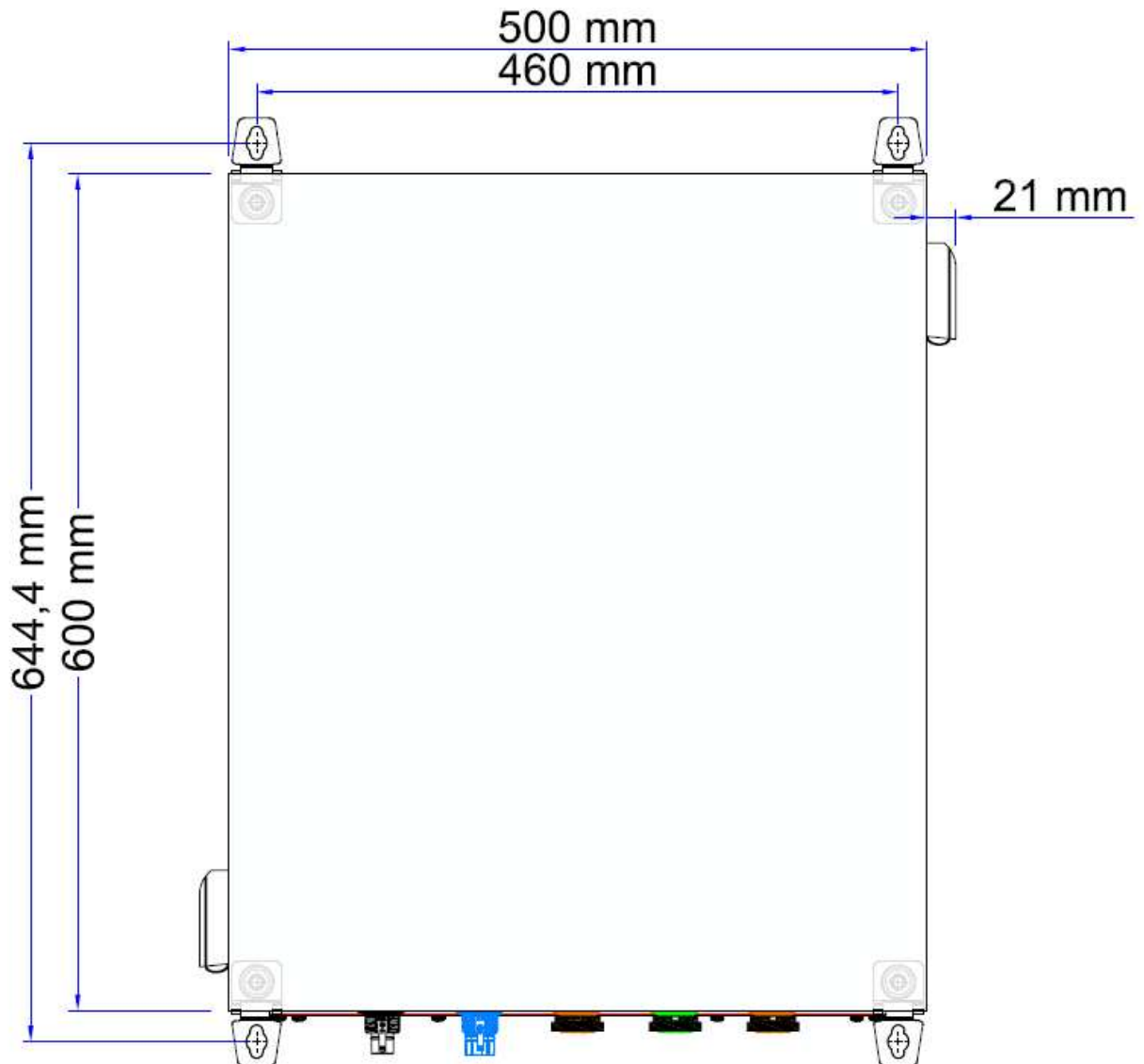
**Batteries are not included** with the delivery of the UPS cabinet. Suitable batteries must be provided and installed to allow the battery backup functionality to become available. Please refer to the battery installation instructions in this manual for detailed instructions.

The cabinet is supplied from the factory with the door close and locked. The key to open the door is supplied in a bag on the side of the enclosure, as shown below. (The image below shows the key in the latch in the locked position.)



## 4 Installing the UPS

The UPS housing must be fixed using the intended fastening devices. The fixation brackets are located on the top and bottom of the enclosure.

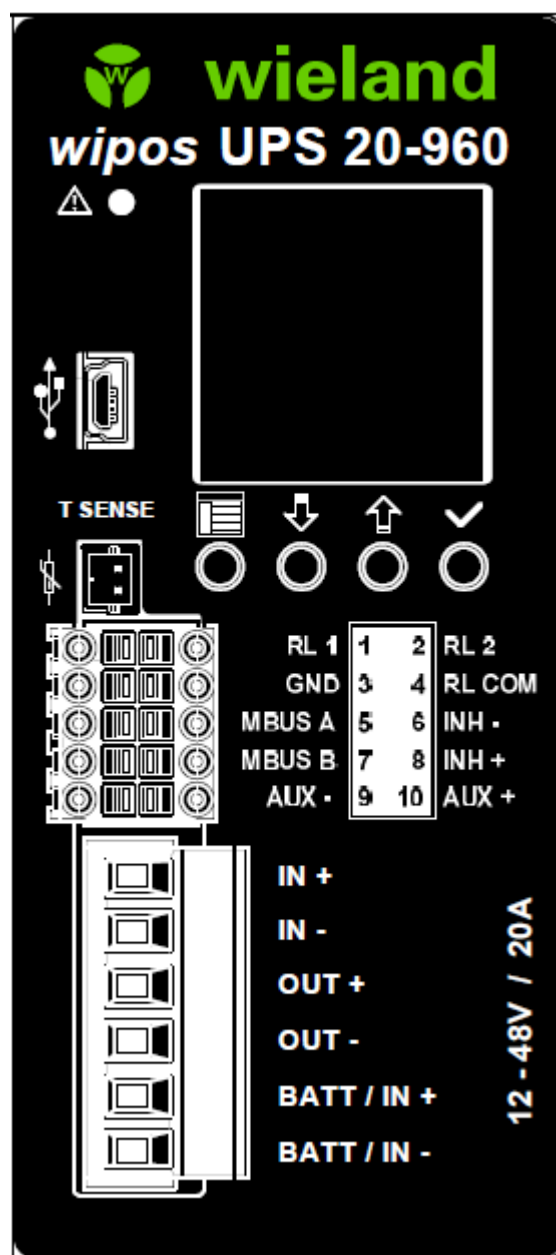


## 4.1 Settings UPS 24-960 module

Check the "UPS 24-960" to ensure that everything looks normal and that the connectors for the power, signals and temperature probe are connected.

Additional diagnostic information for this module can be obtained on [wieland-electric.com](http://wieland-electric.com) when searching for part number 81.000.6230.0.

The controller comes loaded with a parameter settings files specific to the application and should not require any action in the field. For further questions, please contact Wieland Electric's North American Office.



## 4.2 Thermostat

Check the thermostat of the heating system to ensure the switching threshold is set to 5 °C.



## 4.3 Automatic circuit breaker

The switch positions of the F4 automatic circuit breaker must be set to "ON" for the power input, as shown below.



## 4.4 Connecting Peripherals

To connect the relevant peripherals, proceed as follows:

- Connect the *podis*<sup>®</sup> LED lights strings (max 11 lights\*/string) using brown RST20i3 male connectors.
- Connect the UPS cabinet to the 230Vac power supply using a black RST20i3 female connector.
  - The green "DC OK" display on the 48Vdc power supplies must now light up permanently. (Note: some may not light up until the lights are turned on).
- Connect the light control using a green RST20i3 male connector.
- Optionally, connect to the signaling terminal using blue RST20i5 female connectors.

\*Lights intended for use with UPS cabinet are 20W LED lights similar to Wieland 99.800.0329.8.

## 4.5 Functional Description

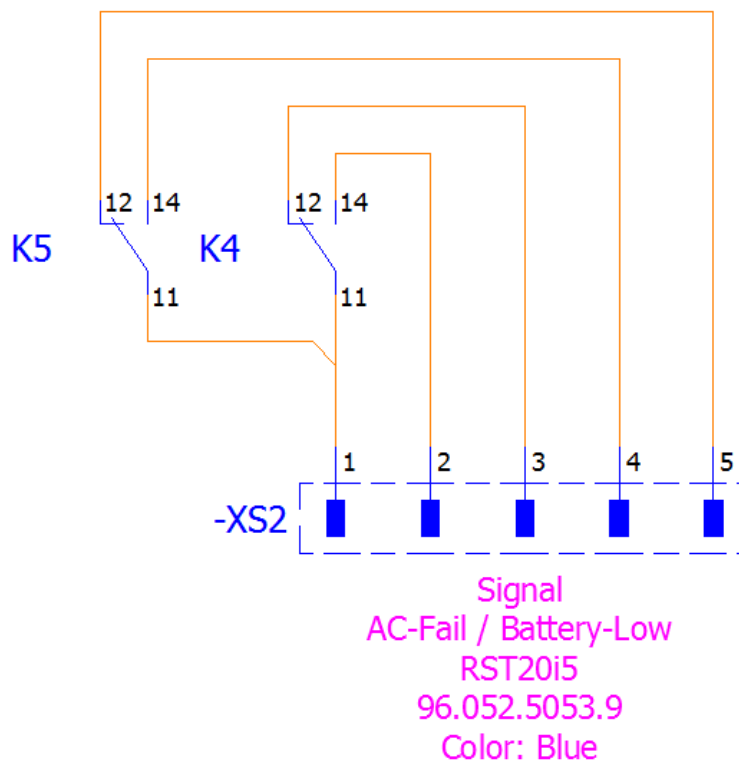
Under normal circumstances, 230Vac power is supplied to the black connector (XS1), and 48Vdc is supplied on the brown connectors XB4 and XB5 to power LED lights.

If the 230Vac power is removed, a battery backup will continue to provide power to connector XB4 for emergency lighting purposes. During this time, the lights will blink 10 seconds on, 1 second off to indicate battery operation.

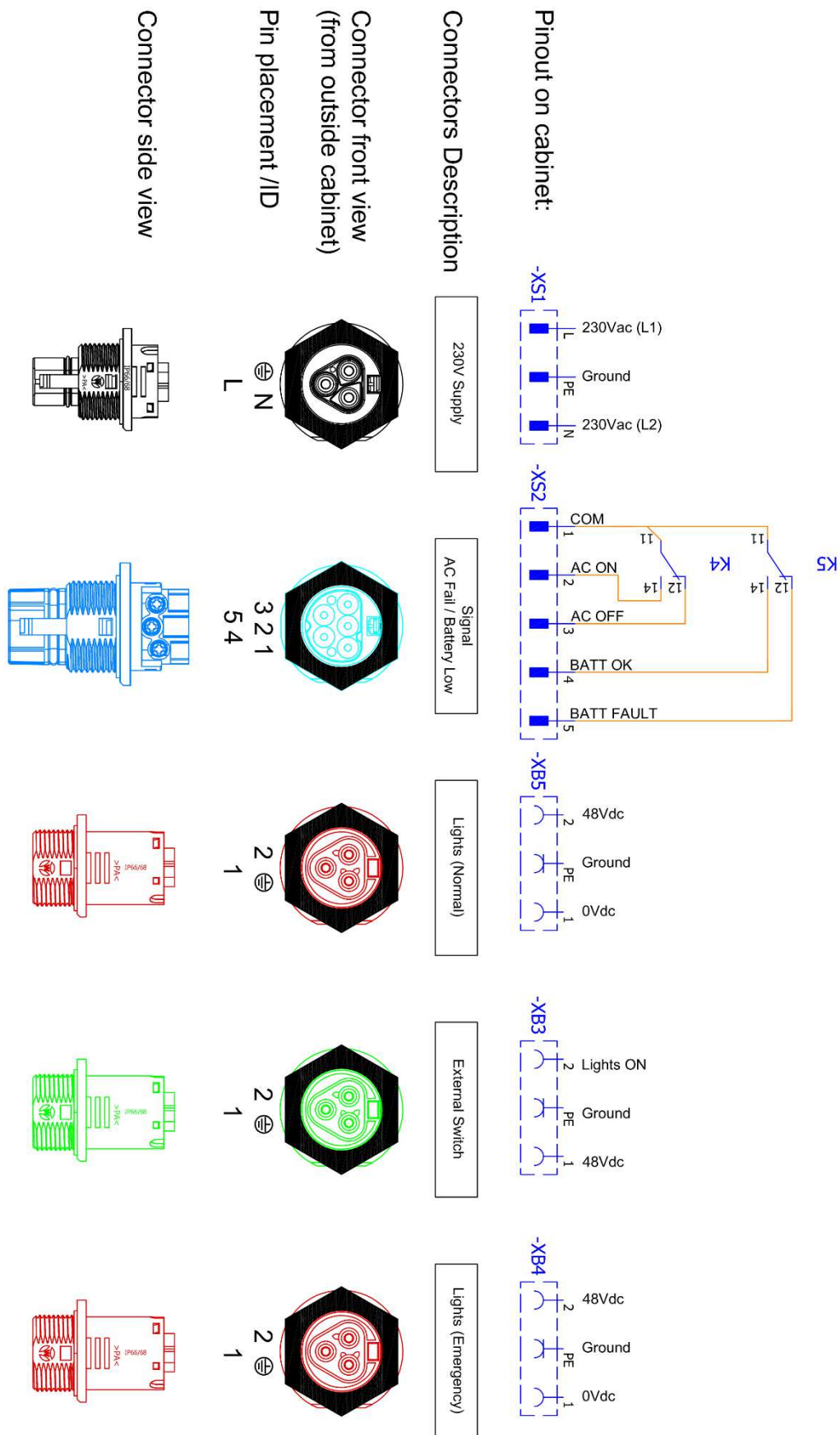
For the lights to be on (normal or emergency mode), there must be an external connection between pins 1 and 2 of the green connector (XB3).

The blue connector (XS2) is used to indicate the status of the AC power supply and the battery voltage.

- Conductivity between pins 1 and 4 means battery is connected and has a voltage above 43.2Vdc.
- Conductivity between pins 1 and 2 means that AC power is on.



## 4.6 Wiring Diagram



## 5 Maintenance and service

### Warning

The UPS contains live components, even when the UPS is separated from the mains. Only use an isolated tool according to DIN 60900 when maintaining the UPS.

Maintenance and access to the interior of the control cabinet should only be done by qualified personnel familiar with conventional electrical cabinets and battery backup systems.

### 5.1 Battery maintenance

The battery (Yuasa NP18-12B or similar) is a rechargeable lead-acid battery. The manufacturer's datasheet provides additional information and maintenance notes.

### CAUTION

- Disconnect the battery before performing maintenance on or replacing the battery.
- Disconnect light control (green connector), AC power black connector, open fuses F5 and F6 and disconnect both pluggable connector from the UPS 24-960 UPS controller before servicing the batteries and UPS side of the cabinet.

### 5.2 Battery exchange

The batteries require periodic maintenance and service. The capacity of the batteries decreases over time, charging cycles and under high and low temperatures. In order to maintain a sufficient battery charge to operate the emergency light and other emergency functions reliably when needed. To determine the replacement intervals, consult the battery manufacturer's datasheet.

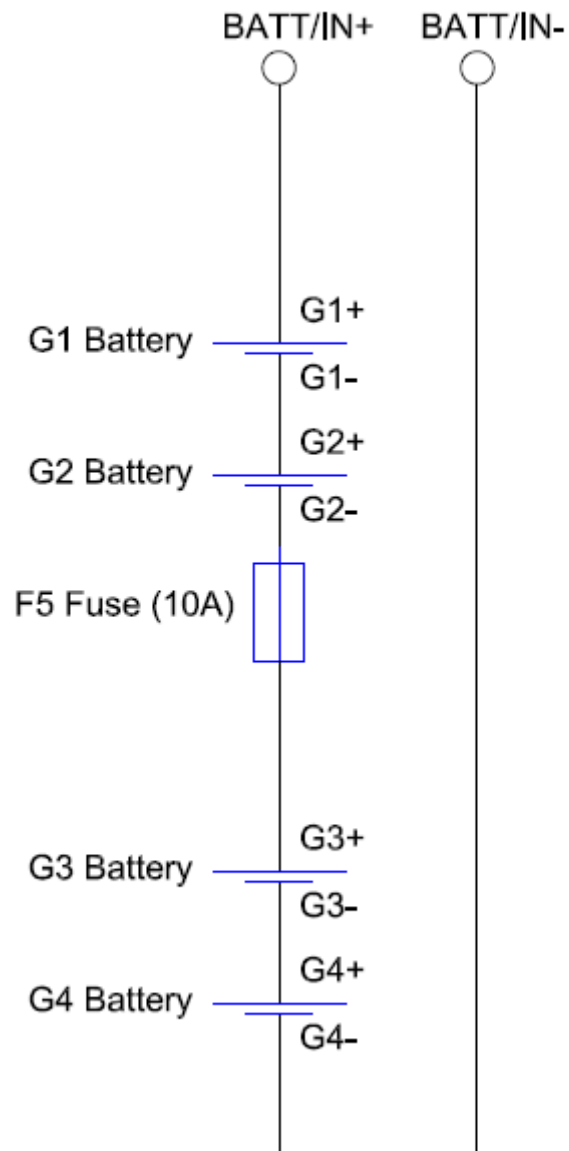
### Required Tools



- 11/32 wrench or socket.
- Slotted screwdriver or 1/4" driver with torque measurement (18 lb-in / 2.0Nm)



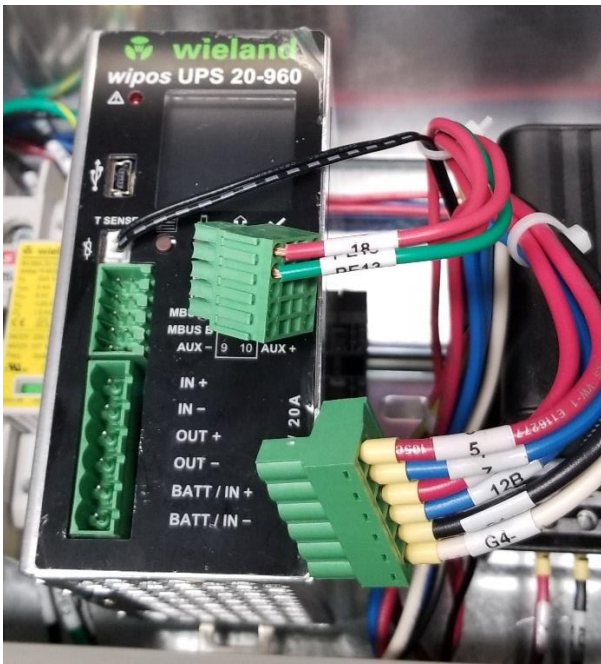
## Battery Connection Diagram



# Step by Step Instructions for Battery Exchange

**⚠ CAUTION**

- Disconnect the battery before performing maintenance on or replacing the battery.
- Disconnect light control (green connector), AC power black connector, open fuses F5 and F6 and disconnect both pluggable connector from the UPS 24-960 UPS controller before servicing the batteries and UPS side of the cabinet.



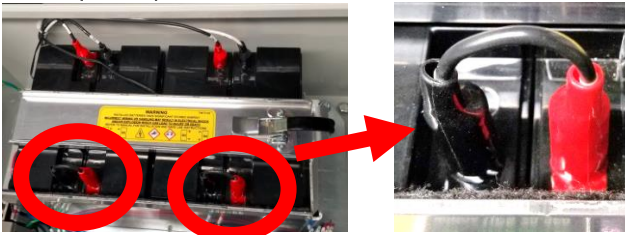
Turn off the lights using light control switch and disconnect the green connector (XB3)

Turn off AC power and disconnect the black connector (XS1)

Open fuse terminals F5 and F6

Unplug BOTH green connectors from the UPS 24-960 controller as shown to the left.

## Battery Jumper Wires



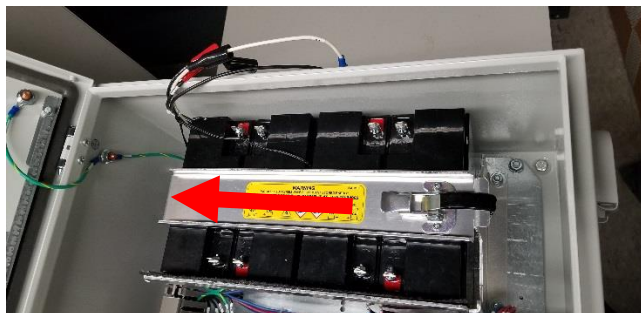
Remove the jumper wires between batteries G1 and G4, and between G3 and G4. To disconnect the jumper wires, slide the protective sleeve up the wire then grab the blue tab connector firmly and pull away from the battery.

## Battery Tab Removal



Subsequently disconnect the battery lead wires connected to G1+, G2-, G3+ and G4-.

**CAUTION:** Exercise care with battery wires to avoid inadvertent contact and short circuits between battery terminals of different potentials.

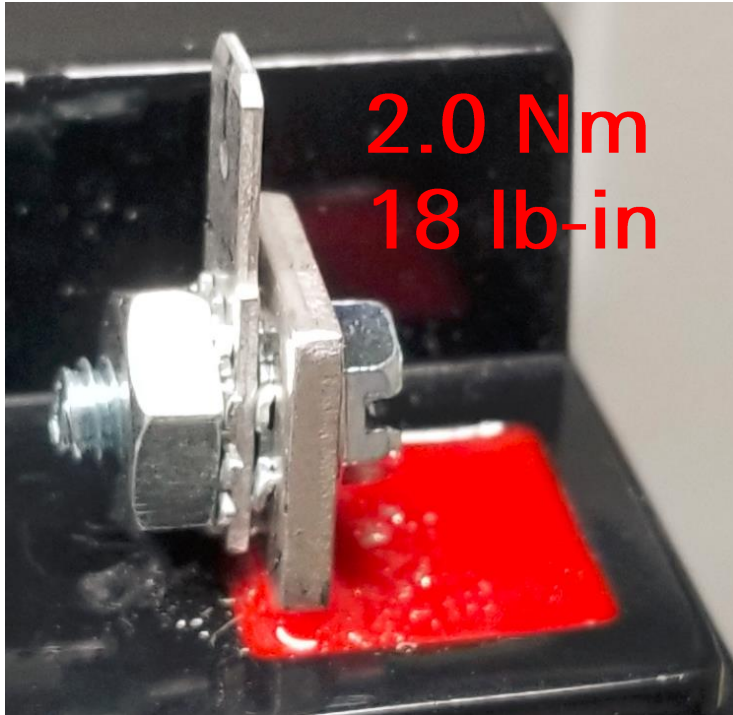


Release latch on the battery retaining bar and remove it by sliding it in the direction of indicated by the red arrow.

Remove batteries from the shelf. A temperature sensor (circled in red) is located between batteries G2 and G3 and held in place by an adhesive tape. Ensure that the sensor is reinstalled on the new batteries and secured in place with the existing adhesive or with electrical tape.



**CAUTION:** Note the placement and orientation of the batteries so that the new batteries can be reinstalled in the same orientation.



Remove the quick connect tabs from the battery terminals.

Reinstall the quick connect tabs to the battery terminals of the replacement batteries.

Note the order of the screw, lock washers quick connect tab and battery terminal, as shown in the pictures on the left.

Tighten the screw to 2.0Nm (18 lb-in) using a 1/4" socket or slotted screwdriver. Use an 11/32" to hold the nut if required.

Ensure that the tab is vertical to ensure an easy connection to the quick connect plugs.

If you are missing pieces, contact Wieland Electric Inc. to order a replacement hardware kit.

The rest of the battery installation steps are the reverse of the battery removal steps.

- Install new batteries in the battery shelf.
- Mind the orientation of the battery terminals. The label on the battery retaining bar can be used as a reminder of the required orientation.
- Place the battery temperature sensor between the two center batteries. The sensor should be in the middle of the batteries to get an accurate reading. Use electrical tape to secure the sensor in place if required.
- Reinstall the battery retaining bar.
- Reinstall the battery lead wires to G1+, G2-, G3+ and G4-. Use the wire labels and battery retaining bar label as a guide. Ensure all tabs are push in completely.
- Reinstall the wire jumpers between batteries G1 and G4, and between G3 and G4. Ensure all tabs are push in completely.
- Ensure all battery connector tabs are covered properly with their rubber covers.
- Replug BOTH green connectors to the
- the UPS 24-960 controller.
- Close fuse terminals F5 and F6
- Reconnect AC power using the black connector (XS1)
- Reconnect the lights by plugging the green connector (XB3).

## 5.3 Storage and transport

To store the UPS, the F5 and F6 fuses should be removed from the fuse holders. The UPS must be stored in accordance with the battery manufacturer's instructions. Following longer storage periods, the batteries may need to be pre-charged using a suitable charging device. Consult the battery manufacturer for instructions.

Avoiding deep discharge after longer periods of storage is recommended. For more information, consult the battery manufacturer.

The enclosure should be stored with the door closed and latched, and in a relatively clean and dry location. Do not store the enclosure flat on the ground where it could be exposed to heavy blowing dust, rain or other forms or precipitation.

## 5.4 Service checklist

The following points must be observed when inspecting the UPS:

- Batteries and components are clean and without damage or leaks.
- Batteries and components are securely mounted to the housing.
- Cables, clamps and plugs are firmly connected and have no signs of damage or loose parts or ends.
- The breathers / ventilation membranes are clean and permeable to air.

## 5.5 Hardware kit

The UPS cabinet is supplied from the factory with a hardware kit (part 34.233.0102.0) shown below, which includes:

1. 2 fuses (10A, 60Vdc) for installation in fuse holders F5 and F6.
2. 2 cable ties for tidy cable layout after battery installation.
3. 1 adhesive tape for battery temperature sensor securement to batteries.
4. 8 screws
5. 8 toothed washers
6. 8 nuts with integral toothed washers
7. 8 quick connect tabs

Contact Wieland Electric Inc. if you require a hardware kit.  
Tel: +1 800 829 8414  
Email: [technical.support@wieland-electric.com](mailto:technical.support@wieland-electric.com)





# wieland

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