

Pavian Portable Electronic Siren

Installation Manual

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Revision: 3

Date of revision: 4th November 2025

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1 Pavian Portable Electronic Siren

The new generation of the **Pavian Portable** electronic siren, a top-line product of electronic systems developed and manufactured by Telegrafia, is a high-quality modular 4th-generation electronic siren. It is not only designed for temporary coverage of areas affected by disasters or large surface mines, where mining sites frequently relocate, but also for integration into a complex warning system, replacing a temporarily non-operational siren or extending warning signal coverage. This versatility provides users with full control over the system's operation, allowing them to adapt it to their specific needs.

2 Siren Construction

The basic siren assembly is kept in three or four durable cases and one bag, as follows:

1. Case with siren electronics
2. Case with a LiFePo4 120Ah/24V battery
3. Plastic transport case with a set of small loudspeakers, including connecting cables
4. Textile transport bag with a standard tall tripod
5. Case with a battery solar-mains charger

Note: A small compact tripod is stored in a transport case together with loudspeaker horns.



Figure 1: The Pavian Portable assembly



Figure 2: The Pavian Portable assembly



Figure 3: The battery solar-mains charger

The individual cases vary in size depending on their purposes.

- The siren electronics case houses one or two AMP18 amplifiers and a single ACU18 control module. The amplifiers are heavily cooled through a cooling tunnel and IP67-rated fans. The case provides space for optional modules such as a radio transceiver and radio modem, a GSM module, a wireless control unit for operating the siren from several hundred metres away, and other accessories.
- The battery case contains a 24 V/120 Ah LiFePo4 battery with a built-in balancer, a disconnecter (protection against complete discharge), and a control voltmeter to measure the battery voltage without activating the siren.
- The large plastic transport case can accommodate a set of aluminium-alloy loudspeakers, cabling, a battery charger, a suitable aerial (if necessary), and even a small compact tripod.
- The standard tall tripod is transported folded in a durable textile bag. It features anchoring eyelets for use in windy areas and holes at the bottom of the tripod legs to securely fix the tripod to the ground with pegs, ensuring stability during operation.
- The small plastic transport case includes a battery charger.

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The siren's accessories also include connecting cables to power the siren from the battery case, as standard.

The loudspeaker horn case may include a separate battery charger (110 V— 230 V AC/29.2 V DC) if the solar charger has not been ordered.

Optionally, a magnetic aerial can be included in the delivery and easily mounted on the loudspeaker mast.

3 Battery

A maintenance-free **LiFePo4** (lithium iron phosphate, LiFePO₄) **battery**, also known as **an LFP battery**, serves as the primary power source for amplifiers and other modules in the siren.

The LiFePo₄ battery, a maintenance-free and reliable power source, ensures maximum safety during use. Its considerably smaller and lighter size compared to a lead battery of the same capacity offers more charge cycles and a relatively low self-discharge current, thereby enhancing the safety and reliability of the siren system.

3.1 Battery Capacity

Siren type	Battery capacity	Minimum full-power time
Pavian Portable 600	1x 120 Ah	300 min ^{*)}
Pavian Portable 1200	1x 120 Ah	150 min ^{*)}

^{*)} The calculated minimum full power time is permanently shortened due to local conditions such as temperature, battery type, and battery age. It assumes that the battery is fully charged; siren standby time is not included, and the calculation is based on full siren power (a continuous alarm tone).

Note: Voice announcements may last twice as long as alarm tones.

4 Siren Electronics Case Connectors

The **siren electronics case** contains the following connectors:

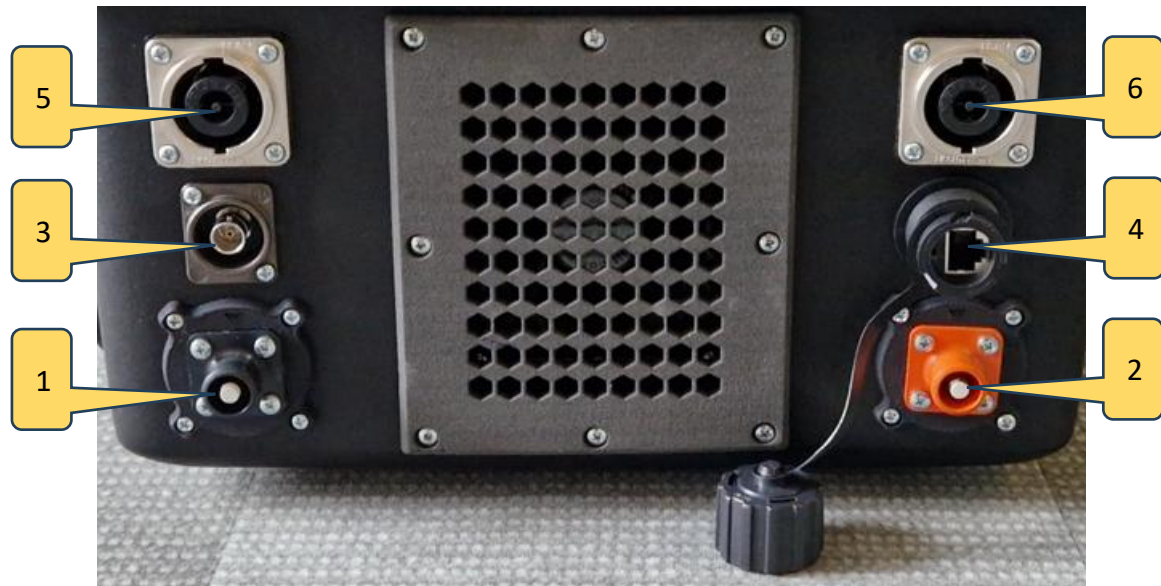


Figure 4: The siren electronics case connectors

1. Power supply input – a minus pole
2. Power supply input – a plus pole
3. Aerial (an optional BNC connector)
4. Ethernet (an optional RJ45 connector)
5. Audio 600-Watt power output (the 1st amplifier)
6. Audio 600-Watt power output (the 2nd amplifier)

5 Battery Case Connectors

The **battery case** is equipped with the following connectors, each serving a specific purpose:



Figure 5: The battery case connectors

1. Battery charging input
2. Battery power output – a minus pole
3. Battery power output – a plus pole

6 Installation

There are two versions of the siren, each with a different tripod type. The 600-watt siren is equipped with a small, compact tripod, while the 1,200-watt model is supplied with a standard tall tripod, each designed for specific power requirements.

6.1 Tripod Assembly

The siren version with a small, compact tripod

- Take the tripod legs out of the case.
- Prepare the loudspeaker horn assembly for the tripod installation.
- Detach the fastening clips from the construction.
- Insert the tripod legs into the frame and secure them with the clips, as shown in **Figure 6**.
- If delivered, install the aerial with a magnetic holder on top of the loudspeaker horn assembly.

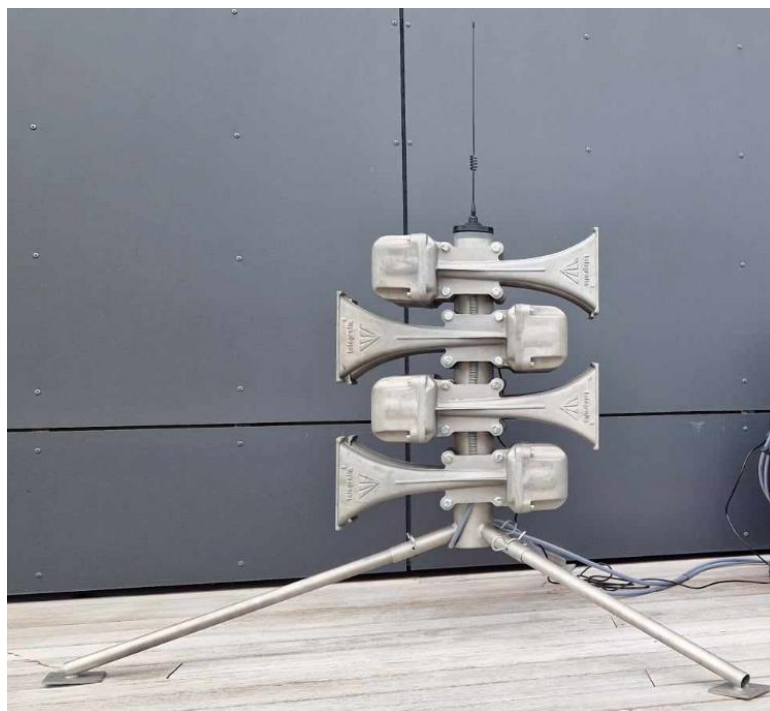


Figure 6: The 1,200 W loudspeaker assembly with an aerial on a small compact tripod

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The siren version with a standard tall tripod

- Take the folded tripod out of the transport bag.
- Unfold the tripod legs and braces, then secure the braces to the legs using the bolts and nuts provided.
- Secure the round plates to the bottom of all three legs and drive them into the ground using the provided pegs, if possible.
- Install the loudspeaker horn assembly on the tripod and tighten the supplied bolts, as shown in **Figure 7**.
- If delivered, install the aerial with a magnetic holder on top of the loudspeaker horn assembly.



Figure 7: The 1,200 W loudspeaker assembly with an aerial on a standard tall tripod

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6.2 Cabling

- Position the battery case in a suitable spot and place the siren electronics case on top.
- Connect the power cables as shown below:
 - The black cable connects to the black (**minus**) terminals on both the battery and siren electronics cases.
 - The orange cable connects to the orange (**plus**) connectors on both the battery and siren electronics cases.



Figure 8: The power cables

- Connect either one (for the 600-watt siren version) or two (for the 1,200-watt siren version) loudspeaker cable(s) to the audio power outputs on the siren's electronics case.
- Insert the connector and turn it gently clockwise until it clicks.



Figure 9: The audio power output connectors

Note: For the 1,200-watt siren version, it does not matter which loudspeaker cable connector is plugged into which panel connector on the siren's electronics case.

- Optionally, connect the Ethernet cable to the Ethernet port on the siren case.
- Similarly, if delivered, connect the aerial cable to the aerial connector on the siren case.

Note: The quantity and type of aerial connectors vary according to the customer's specifications.



Figure 10: The optional aerial and Ethernet connectors

7 Uninstallation

- Disconnect all cables from the siren electronics and battery cases.

Note: To release the cables, press the lock buttons as illustrated in **Figures 11** and **12**.

- Disassemble the tripod structure.
- Place the loudspeaker horns, cables, and other accessories into the transport case.
- Place the tall tripod components into the transport bag.

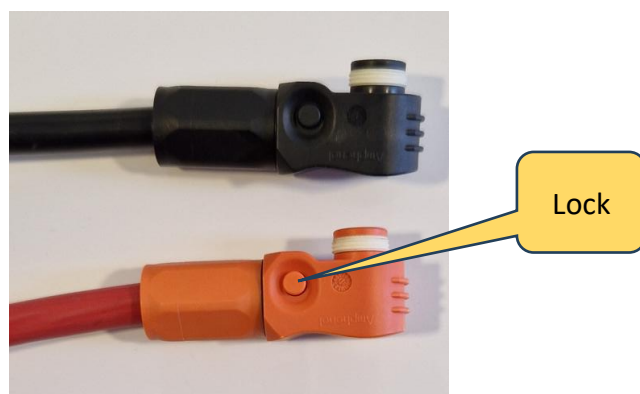


Figure 11: The power cables with connectors

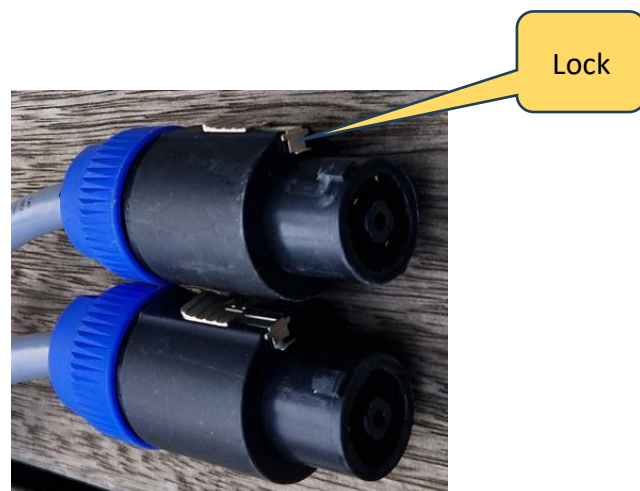


Figure 12: The audio power output cables with connectors

8 Battery Charging

8.1 Mains Battery Charger

A mains charger is included in the delivery only if a combined solar-mains charger is not.

- Connect the supplied battery charger 100 V – 240 V AC/29.2 V DC to the charging port on the battery case.
- The charging process takes at least 12 hours when using a 10 A current to recharge the 120 Ah battery fully.



Figure 13: The mains battery charger

- The rechargeable voltage is 27.4 V for the fully charged battery. The battery voltage can be checked by pressing the button on the embedded voltmeter, as shown on a small display in **Figure 14**.



Figure 14: The voltmeter display screen

8.2 ~~Solar-Mains Battery Charger~~

~~A combined solar-mains charger is included in the delivery only if a mains charger is not.~~



~~Figure 15: The solar-mains battery charger – an inside view of the charging case~~



~~Figure 16: A view of the output battery charging connector on the charging case~~



~~Figure 17: A view of the input solar panel and mains connectors on the charging case~~

8.2.1 Procedure for Connecting Cables

The following order must be maintained when connecting the cables:

- First, connect the battery box with the supplied cable.
- Then, connect the solar panel or the 230V mains cable.
- Finally, the charging process begins automatically.

Note: The solar panel and the mains can be connected simultaneously, but it is recommended to use only one of them.

8.2.2 Solar Charging Process

When charging from a solar panel, the charging status is displayed on the charger controller (Qoltec model 53661). More details can be found in the solar charger user manual.

It is advisable to open the charger case to enhance cooling during charging.

Caution: The solar charger is factory-configured. **Do not change the factory settings.**

8.2.3 Mains Charging Process

When charging from the 230V mains, two LEDs on the charging case's front panel in the STS housing illuminate as follows:

- the upper two-colour LED
 - The red colour signifies that the battery is charging.
 - The green colour shows that the battery is fully charged.
- the lower LED:
 - The red colour indicates that the internal mains power supply is connected.

It is recommended to open the charger case to enhance cooling during charging.

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