

# User Manual

## Galaxis Showtechnik

# PYROTEC

## Power Pack



**Firmware: not applicable**

**Revision Date: March 31<sup>st</sup> 2021**

Batch No.: P120100




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# 1 Introduction

## 1.1 Safety instructions

Observe all safety instructions in this documentation! Safety instructions warn of dangers when handling devices and provide information on how to avoid them. They are classified according to the severity of the danger and divided into the following groups:

<p><b>DANGER</b></p> 	<p>Danger signals dangers for persons. If you do not follow the instructions for avoiding the hazard, the hazard will certainly result in death or serious physical injury.</p>
<p><b>WARNING</b></p> 	<p>Warning indicates dangers for persons. If you do not follow the instructions for avoiding the hazard, the hazard is likely to result in death or serious injury.</p>
<p><b>CAUTION</b></p> 	<p>Caution indicates danger to persons. If you do not follow the instructions for avoiding the hazard, the hazard is likely to result in minor physical injury.</p>
<p><b>NOTICE</b></p>	<p>Note signals dangers for objects or data. If you do not follow the instructions for avoiding the hazard, the hazard will probably result in damage to property.</p>
<p><b>TIP</b></p>	<p>A tip provides additional or supplementary information.</p>

## **1.2 Requirements the operator has to fulfill and necessary qualification**

This product may only be operated by persons of legal age. In Germany the user must be at least 18 years of age.

This product may only be used within the scope of a professional and occupational activity.

## **1.3 Area of application**

The Power Pack is a switching amplifier with one input and one output.

It is used to use a firing module with capacitor buffered outputs to trigger effects that require a longer DC firing pulse, such as confetti shooters - those with the heating wire - or compressed air operated confetti shooters with magnetic valves.

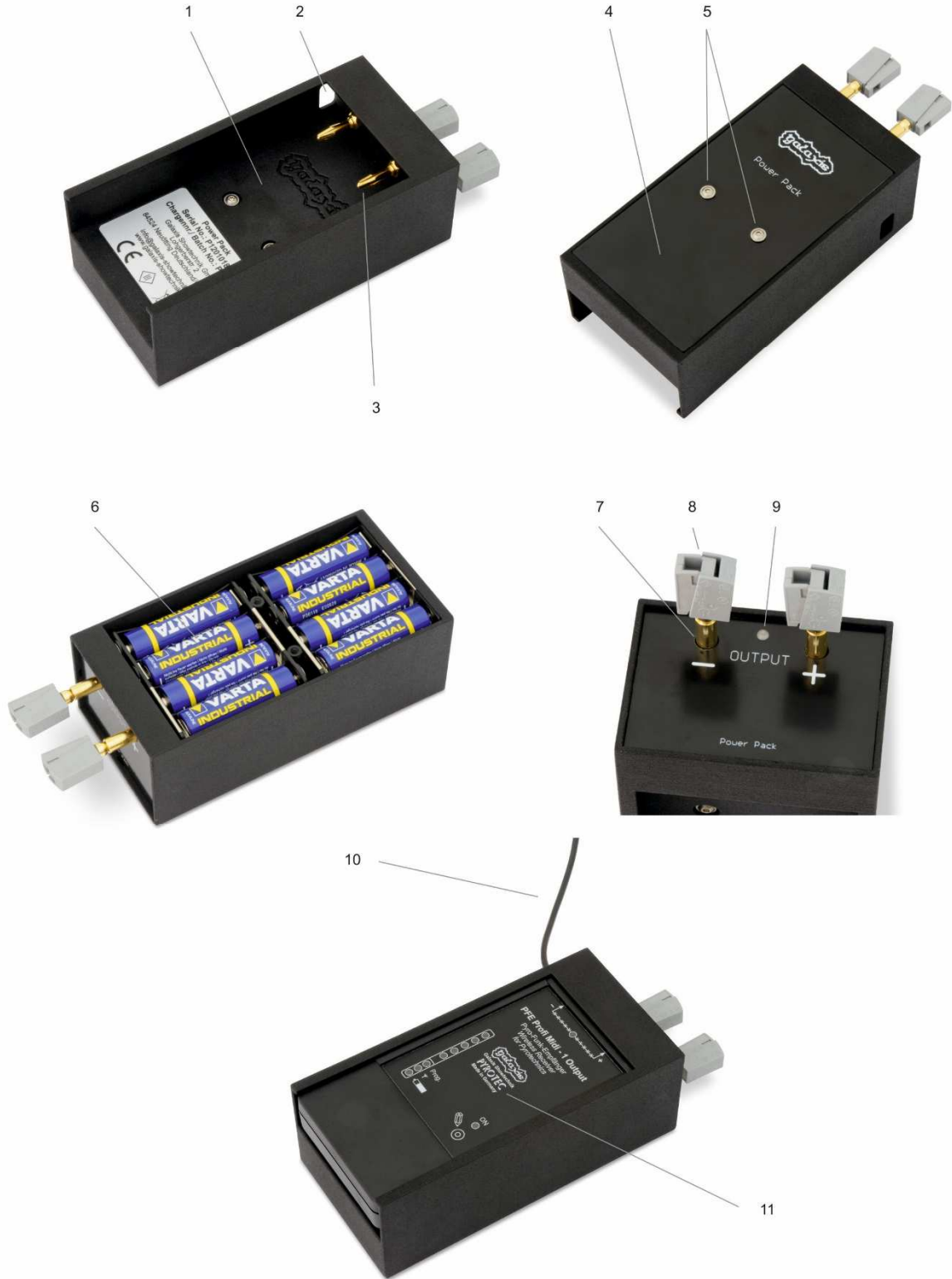
Capacitor-buffered firing outputs of pyrotechnic firing systems deliver only a short firing pulse. This short, needle-shaped pulse is extended to a few seconds by the Power Pack.

The use of the device for triggering igniters or detonators or any use for triggering pyrotechnics or controlling flame effect devices etc. is prohibited. The device does not offer any added value for these improper applications compared to firing and control devices developed for these purposes.

## 2 Illustrations

# Power Pack

### Illustrations



## 2.1 Description of the illustrations

1	Slide for PFE Profi Midi 1 Output
2	Hole for the antenna
3	Input, 2 x banana plugs 4 mm
4	Battery compartment cover
5	Fixing screws for the battery compartment cover
6	Battery compartment and batteries (when battery compartment cover is open)
7	Output, 2 x banana jack 4 mm
8	Quick-fastening clamps
9	Control LED, colour: red
10	Antenna of the PFE Profi Midi 1 Output
11	PFE Profi Midi 1 Output inserted into the slide

## 3 Basic operation of the device

### 3.1 Operation

To switch on the output, the input must be live. A capacitor is charged internally, which ensures that the output delivers voltage for a certain time, even though the voltage at the input has already collapsed.

In case of operation with the PFE Profi Midi 1 Output you have to trigger the firing channel of the receiver to activate the Power Pack.

As soon as the output of the device is active, the red LED on the Power Pack lights up.

<b>TIP</b>	It is normal for the LED on the Power Pack to light up dimly when the batteries are inserted (only visible in the dark and only when no load is connected).
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<b>TIP</b>	It is also normal to measure a certain voltage at the output with a multimeter when the output is inactive and no load is connected. As soon as a load is connected, this voltage breaks down and only a few $\mu\text{A}$ of test current flow.
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### 3.2 Interruption of operation

If you do not use the device for several months, we recommend that you remove the batteries so that the device is not damaged if the batteries leak.

### 3.3 Input

The input can be supplied with voltages in the range from 12 to 25 Volts, whereby the polarity is irrelevant because there is a rectifier in the device.

The internal load of the input is 660 Ohm and 47 $\mu$ F.

If a cable is connected to the input of the device, the cable length must be less than 3.0 m.

### 3.4 Output

The output provides a DC voltage. For new batteries, the output voltage is up to 12.8 volts. Depending on the load, however, this voltage also drops significantly because the batteries have a certain internal resistance.

Depending on the load, the current at the output can reach values of up to approx. 50 A at the moment of switching on, with the output transistor delivering no more than approx. 10 A shortly thereafter.

In general, however, alkaline batteries are not capable of delivering such high currents in the long term. Accordingly, the current decreases at high loads.

The output of the device is short-circuit proof. The intelligent switching transistor is protected against overcurrent, overload, overtemperature, overvoltage and electrostatic discharges.

The output can drive resistive, inductive and capacitive loads.

The standard duration of the output pulse is approx. 3.5 seconds if the device is controlled by the PFE Profi Midi 1 Output. On request, the device can also be adapted if a shorter or longer pulse duration is requested.

When using other firing systems, the pulse duration depends on the charging voltage and the capacity of the firing capacitor.

The cable connected to the output of the device must be less than 3.0 m long.

#### TIP

We recommend the use of cables with a copper strand with a conductor cross-section of at least 1.5 mm<sup>2</sup>. Keep the cables as short as possible so that losses are kept to a minimum.

### 3.5 Maximum number of confetti shooters with heating coil

A maximum of three confetti shooters with heating filaments can be operated in series. The parallel connection of confetti shooters is not recommended.

#### TIP

If the confetti shooters are of inferior quality and the heating coils are subject to a too large spread, it is possible that not all shooters trigger. In this case, only one or two shooters can be reliably triggered.

### 3.6 Maximum load when controlling magnetic valves

The device can drive magnetic valves with a coil voltage of 12 Volts DC and a coil power of up to 32 Watts. Only one solenoid valve should be connected per device.

## 4 Batteries

### 4.1 Recommended battery type

Only use AA-size alkaline batteries in this device.

<b>TIP</b>	In recent years, it has become apparent that alkaline batteries from well-known manufacturers are also being leaking because production has been relocated to low-wage countries. The batteries of the manufacturer Varta have hardly shown this problem lately, which is why we recommend them.
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<b>TIP</b>	Operation with rechargeable batteries is not possible because their voltage is lower. The output transistor needs a minimum voltage and this may be undercut when using rechargeable batteries.
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### 4.2 Insertion of batteries

To insert the batteries, unscrew the two Allen screws on the back of the device and remove the battery cover. Now the battery compartment is accessible and you can insert the batteries. Make sure the polarity is correct.

Only use batteries of the same type and with the same state of charge.

### 4.3 Battery life

A set of batteries can be used to trigger about 50 confetti shooters or 50 times a magnetic valve.

<b>TIP</b>	If you are unsure whether the batteries are still sufficiently full, you can measure the voltage with a multimeter. If the voltage of each individual cell exceeds 1.45 volts, the cells can still be used.
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### 4.4 Removing the batteries

Open the screws of the battery cover and remove it. Now you can remove the batteries. Then you should put the battery cover back on and screw it tight.

## 5 Protection against moisture and humidity

This device is not waterproof. Always protect it from moisture, humidity and water.

## 6 Maintenance

In principle, the Power Pack does not require any special maintenance if handled carefully. However, we recommend that you send the device to the manufacturer approximately every two years in order to have all functions of the unit checked.



## **7 Warranty**

The warranty period is 24 months.

If you have reason for complaint within this period, please send the device properly packed and carriage paid to the manufacturer. Please include a detailed description of the fault symptom.

Warranty is excluded if the device was damaged due to wrong usage or excessive stress.

Unauthorized repairs and the use of non-original parts will void all warranty, guarantee and product liability claims with immediate effect.

## **8 Damage due to misuse, faulty operation, malfunction**

The devices were developed exclusively for triggering confetti shooters with heating coils or for controlling confetti shooters with compressed air accumulators and solenoid valves. Any other application must be discussed in advance with the manufacturer. In the event of the above-mentioned consequences, liability will only be granted if the cause lies within our sphere of influence. The devices have been developed, tested and manufactured to the best of our knowledge and belief.

## 9 Technical data

Power supply	8 x Alkaline batteries, size AA
Output voltage	approx. 12.8 Volt if batteries are new and with no load
Input	Banana plug 4 mm, Internal resistive load: 660 Ohm Internal capacitive load: 47 $\mu$ F
Output	Banana jack 4 mm, for inserting quick-fastening clamps
Default output pulse	3.5 seconds
Humidity	10 - 90% rH, no condensation
Allowable altitudes above sea level	Storage and transport: -500 to 12,500 m Operation: -500 to 4,000 m
Protection class	III
Dimensions including the quick-fastening clamps	L x W x H: 175 x 70 x 49 mm
Weight without batteries and without receiver in the slide	187 g
Weight with batteries and without receiver in the slide	374 g
Weight with batteries and with receiver in the slide	525 g

### Included in delivery:

- 2 Quick-fastening clamps
- 8 AA alkaline batteries
- 1 User manual

## 10 Compatibility

The Power Pack is compatible with numerous firing systems from various manufacturers, as long as they have a capacitor-buffered output. However, the written approval of Galaxis Showtechnik GmbH must be obtained before use. If necessary, Galaxis Showtechnik GmbH will check the compatibility with the hardware beforehand. Within the Galaxis product family the Power Pack is intended for use with the PFE Profi Midi 1 Output. The Power Pack is designed so that this receiver can be inserted into the slide and contacted via the protruding banana plugs without the need for any input cables.

## 11 Accessories

The following accessories are available for this device. The user is free to use commercially available alkaline batteries and banana plugs.

Item No.:	Description:
2136	Alkaline Battery 1.5 V AA
1391	Quick-fastening Clamp

## 12 CE marking

This device is marked with the CE logo:



Each device is accompanied by an EU Declaration of Conformity.

## 13 Address of the manufacturer and contact details for requesting an EU declaration of conformity

Galaxis Showtechnik GmbH  
Lohgerberstr. 2  
84524 Neuötting  
Germany

Tel.: +49 / 8671 / 73411  
Fax: +49 / 8671 / 73513

Homepage: [www.galaxis-showtechnik.de](http://www.galaxis-showtechnik.de)  
E-Mail: [info@galaxis-showtechnik.de](mailto:info@galaxis-showtechnik.de)

Please use these contact details if you want to request an EU declaration of conformity.

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