



# Adjustable Fused Power Supply

7-20V – 3A

P010-52

## Contact & Product

### mo-Vis BVBA

Biebuyckstraat 15 D  
9850 Deinze - Belgium



Website: [www.mo-vis.com](http://www.mo-vis.com)  
E-mail: [contact@mo-vis.com](mailto:contact@mo-vis.com)  
Telephone: +32 9 335 28 60

### User & Installation manual

Produced and published by  
mo-Vis bvba, Belgium  
Edition 2, February 2019  
Manual item: D-P010-52-71

## Contents

|  |   |
|--|---|
| Contact & Product  | 1 |
| Contents   | 1 |
| Important information about this Manual                  | 2 |
| Support, scrapping and spare parts                       | 2 |
| Warranty   | 3 |
| Safety precautions                                       | 4 |
| Design and function of the Adjustable Fused Power Supply | 6 |

|  |    |
|--|----|
| Installation instructions -----              | 7  |
| Using the Adjustable Fused Power Supply----- | 9  |
| Maintenance-----                             | 10 |
| Technical data -----                         | 11 |

## Important information about this Manual

Congratulations for choosing a mo-Vis product! If you would like to learn more about mo-Vis and its products, we invite you to visit our website: [www.mo-vis.com](http://www.mo-vis.com).

Before you install or begin using this product, it is important that you read and understand the content of these installation and operating instructions, the safety instructions in particular.

The installation instructions will guide you as an installer through the options and possibilities with the mo-Vis product.

The operating instructions are primarily intended to acquaint you with the functions and characteristics of the mo-Vis product and how you can use it in the best manner possible. They also contain important safety and maintenance information, as well as describe possible problems that can arise during use. Always keep the operating instructions handy in connection with your wheelchair, since the need for important information can arise concerning its use, safety and maintenance.

All information, pictures, illustrations and specifications are based on the product information that was available at the time of printing. Pictures and illustrations shown in these instructions are representative examples and are not intended to be exact depictions of the various parts of the product.

We reserve the right to make changes to the product without prior notice.

### ***Ordering documentation***

You can download additional copies of this User & Installation manual on the mo-Vis website: [www.mo-vis.com](http://www.mo-vis.com).

## Support, scrapping and spare parts

### ***Technical support***

In case of technical problems, we advise you contact your dealer.

If the dealer is not available, or unknown, please contact mo-Vis bvba by email [support@mo-vis.com](mailto:support@mo-vis.com) or by phone +32 9 335 28 60.

Always state the device serial number when contacting mo-Vis. This ensures you are provided with the correct information.

### ***Spare parts and accessories***

Spare parts and accessories must be ordered by the dealer at mo-Vis bvba.

### ***Scrapping & recycling***

For scrapping, adhere to your local waste legislation.

Dispose of obsolete electronic parts responsibly in accordance with local recycling regulations.

## Warranty

mo-Vis bvba warrants the unit to be free from defects in material and workmanship for a period of 2 years under proper use, care and service. All warranties only cover parts and do not extend beyond the initial purchaser from an authorised mo-Vis dealer.

### ***Start of the warranty period***

Each warranty shall begin on the date the product is first delivered to the customer.

### ***Repair and replacement***

For warranty service, we advise you contact the dealer from whom the product was purchased. In the event of a defect in material or workmanship, the dealer must obtain a return authorisation (RA) number from mo-Vis and the product must be shipped to a service centre designated by mo-Vis. mo-Vis will repair or, at mo-Vis' option, replace any product covered by the warranty.

### ***Disclaimer and Limitations of Remedies***

The express warranties set forth in this agreement are in lieu of all other warranties of merchantability or fitness of purpose. In no event shall mo-Vis be liable for any direct, indirect, incidental or consequential damages resulting from any defect in this product.

Warranty of parts subject to "normal wear and tear" (e.g. pads, joystick balls, batteries ...) are not covered in the warranty except as it applies to defects in material or construction.

## ***Amendments***

No person is authorised to alter, extend or waive the warranties of mo-Vis.

## ***Voiding of warranties***

The foregoing warranties are contingent upon the proper installation, use, maintenance and care of the product. The warranty will be void if the product has been installed or used improperly, or if it has been repaired or any part replaced by persons other than mo-Vis or an authorised dealer. The unit is considered as a non-serviceable part.

The addition of equipment or features that are not manufactured or recommended by mo-Vis could affect the intended function of the mo-Vis product and may invalidate the warranty.

## ***Understanding usage***

The health care professional (authorised installer) is responsible for understanding the intended use of the mo-Vis equipment, the specifications and its programming parameters. mo-Vis cannot be held responsible for damage caused by incorrect installation or incorrect use of the product. Misuse, mishandling, or storage is not covered by this warranty.

# **Safety precautions**

## ***General***

The Adjustable Fused Power Supply is intended to be fitted on any power wheelchair with 24 V connection.

Incorrect use or installation may lead to risk of injury to the user and damage to the wheelchair or other property.

In order to reduce these risks, you should carefully read this instruction manual, paying particular attention to the safety instructions and warning texts.

Only install this product on a wheelchair where the wheelchair manufacturer allows the installation of third party parts.

Any unauthorised use of the product may lead to increased risk of accident. Carefully follow the recommendations in this manual in order to prevent accidents from use.

The Adjustable Fused Power Supply Unit is a non-serviceable part.

In case of doubt for alterations and adjustments, always contact a qualified service engineer.

In case any serious incident occurs in relation to this device, this should be reported immediately to mo-Vis and the competent authority of the Member State in which the user is established.

### **Warning labels**

This manual contains the following warning labels, which are intended to draw attention to situations that could lead to unwanted problems, e.g. personal injury or damage to the wheelchair.



#### **CAUTION!**

*Please use caution where this symbol appears.*



#### **WARNING!**

*Please use extreme caution where this warning symbol appears. Failure to observe warnings can lead to personal injury or property damage.*



#### **CAUTION!**

##### **Limited liability**

*mo-Vis accepts no liability for personal injury or damage to property that may arise from the failure of the user or other persons to follow the recommendations, warnings and instructions in this manual.*



#### **CAUTION!**

##### **EMC Requirements**

*The electronics of a power wheelchair and its options can be affected by external electromagnetic fields (for example from mobile telephones). Similarly, the electronics of the wheelchair or options themselves can also emit electromagnetic fields that can affect the immediate surroundings (for example certain alarm systems in businesses).*

*The limit values for Electromagnetic Compatibility (EMC) with respect to power wheelchairs are set in the harmonised standards for the EU in the Medical Devices Directive, No. 93/42/EEC. The Adjustable Fused Power Supply complies with these limit values.*



#### **WARNING!**

##### **Assembly**

*The unit should only be installed or adjusted by a qualified service engineer or someone with adequate knowledge to perform the adjustment in an expert manner.*

##### **Maintenance and service**

*Carry out only the service and maintenance activities specified in this manual, as long as you comply with the demands stated in this manual for a specific action. All other service, alterations to and interventions on the Adjustable Fused Power Supply must be carried out by a qualified service engineer or someone with adequate knowledge to perform the adjustment in an expert manner. In case of doubt, contact a qualified service engineer or mo-Vis.*

*Use only spare parts or accessories approved or recommended by mo-Vis. All other use could lead to changes which might impair the function and safety of the product. It could also lead to the warranty becoming void.*

## Design and function of the Adjustable Fused Power Supply

### **Intended use**

The Adjustable Fused Power Supply can be used to power any device with a DC voltage from 7 to 20 V and a power consumption of up to 3 A. The unit is powered by the wheelchair (24 V) and will transform the 24 V input voltage to an adjustable (7 – 20 V) output voltage.

### **Double fused**

The Adjustable Fused Power Supply is double fused: the power and ground wire of the output are fused. This is to prevent from accidents in case of a damaged load or cables.



### **WARNING!**

*The unit should only be used for loads which are completely isolated from the chassis of the wheelchair.*

### **Indicator light**

A green LED on the unit indicates when the unit is powered.

## Parts and accessories

### **Available versions**

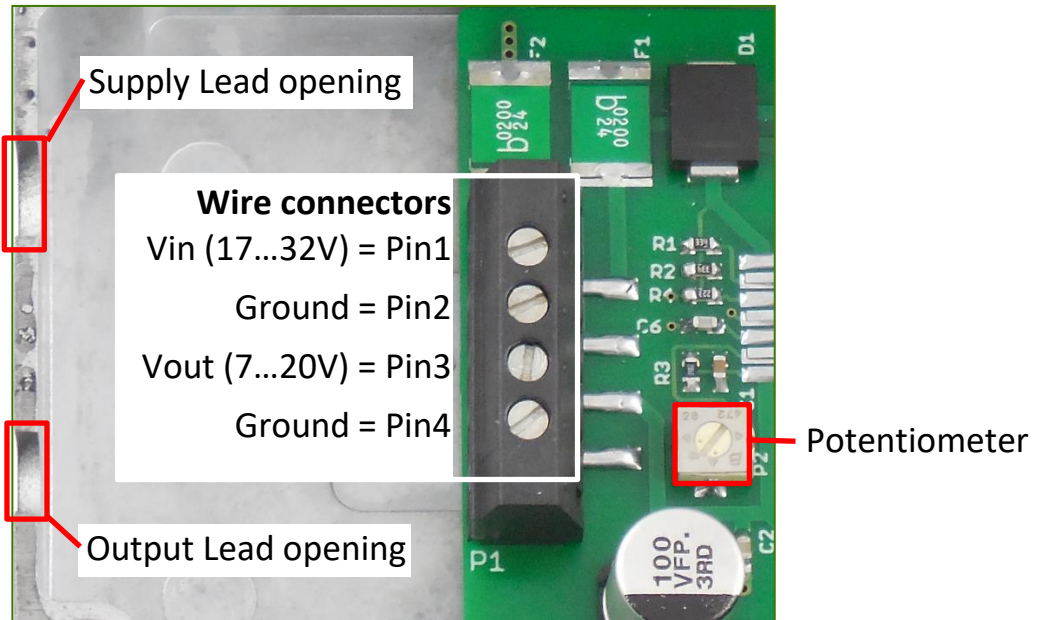
Adjustable Fused Power Supply 7-20 V – 3 A (P0101-52): for installation on a powered wheelchair 24 V.

## Not included

Supply (input) and load (output) lead cables are not included.

## Parts

Below, you find an overview of the relevant parts with regards to installation.



## Installation instructions

### Preparations

#### Qualified service engineer

Only a qualified service engineer may install the Adjustable Fused Power Supply.

#### Tools

- Use a Phillips screwdriver to unscrew the screws to open the lid.
- Use a flathead screwdriver (2.5 mm) to connect the wiring and adjust the potentiometer.



#### **CAUTION!**

*Use the proper tools to install and adjust the unit. The use of improper tools may cause damage to the device.*



#### **CAUTION!**

*Do not tighten screws with an excessive force.*

## **Installation plan**

Set up an installation plan before beginning the installation. Based on the users' needs and with actual measurements of the wheelchair, this plan should specify where the unit will be placed, and how the cabling will be guided.

## **Serial number sticker**

The additional serial number sticker that can be found in the package should be adhered to the back of this manual.

## Connecting the input to the Adjustable Fused Power Supply



### **WARNING!**

*Keep the supply (Input) Lead disconnected from any power source while wiring.*



### **CAUTION!**

*Use a proper flathead screwdriver to not damage the screw heads.*

To connect the wiring in the Adjustable Fused Power Supply Unit, proceed as follows:

1. Unscrew the 4 screws with a Phillips screwdriver at the bottom of the box, and remove the lid.
2. Connect the supply (Input) Lead.
  - Connect the power to Pin1 = Vin (17...32 V)
  - Connect the ground to Pin2 = Ground
  - Use a wire section of min. 1mm<sup>2</sup> (18 AWG).



### **WARNING!**

*If the Supply Lead is connected directly to the batteries, place a fuse of max. 10A between the unit and the battery connection, as close to the batteries as possible*

*An additional fuse is not needed in case the power is taken from the wheelchair electronics bus (R-net or DX) or the charger socket, as these have an integrated fuse.*

3. Connect the input to the wheelchair electronics  
RESULT: the green indicator LED on the unit turns on.
4. Check the output voltage with a voltage meter
5. Adjust the output voltage using the potentiometer.
  - Turn clockwise to increase the output voltage.
  - Turn counter clockwise to decrease the output voltage.



- The output voltage is between 7 V and 20 V

**CAUTION!**

*Do not have any device connected to the output while adjusting the output voltage, as an excessive voltage may damage the device.*

## Connecting the output and installing the Adjustable Fused Power Supply

1. Connect the Load (Output) Lead
  - Connect the power to Pin3 = Vout (7...20 V)
  - Connect the ground to Pin4 = Ground
  - Use a wire section of min. 0.25 mm<sup>2</sup> (30 AWG).
2. Guide the supply and load leads through the respective openings.
3. Place the lid back on the box.

**CAUTION!**

*Check that the supply and load leads remain properly in their respective openings to avoid damage to the wiring.*

4. Fasten the lid back on the box with the 4 screws.
5. Place and secure the Adjustable Fused Power Supply unit onto the wheelchair according to the installation plan.  
It is advised to install the unit with the indicator LED on top and the cable outputs at the bottom.
6. Guide all cabling according to the installation plan.

**WARNING!**

*Mind damaging the unit and wiring. Make sure the cabling is mounted in such a way the excessive wear and tear is avoided.*

## Using the Adjustable Fused Power Supply

### Use conditions

The Adjustable Fused Power Supply is intended for use as installed by the dealer, in accordance to the installation instructions in this manual.

The foreseen use conditions are communicated by the dealer or service engineer to the user and/or attendant during the first time use.

## Troubleshooting

Below, is a list of possible problems and their probable cause.

| Problem                                     | Possible cause                              | Remedy   |
|---|---|--|
| indicator LED is off or device has no power | no input voltage                            | <ul style="list-style-type: none"><li>– Check whether all power cables are still attached.</li><li>– Check the fuse between the wheelchair battery and the unit.</li></ul> |
|   | short-circuit: damaged cabling              | Check cabling, and replace if necessary.   |
|   | short circuit: device consumes more than 3A | Disconnect device and check device.  |
|   | incorrect voltage                           | Check and/or adjust voltage.   |
|   | device consumes more than 3A                | Disconnect device and check device.  |
|   | disconnected cable                          | Reconnect device.  |
|   | damaged cabling                             | Check cabling, and replace if necessary.   |

If the problem persists after intervening, please contact your local dealer or mo-Vis to attend to the problem.

## Maintenance

### *Cleaning*

- Gently remove dust and dirt with a damp cloth.
- The use of non-aggressive disinfectant cleaning agents is allowed.



### **WARNING!**

*Do not immerse the Unit in water or use excessive amounts of liquid.*

### *Unit maintenance*

The Adjustable Fused Power Supply is maintenance-free. Under regular use circumstances, the unit does not require additional maintenance.

## Technical data

### ***Name***

- Adjustable Fused Power Supply (P010-52)

### ***Power consumption***

- in unloaded mode:  $V_{in} > 17\text{ V}$  3.3 mA,  $V_{in} < 17\text{ V}$  2.0 mA

### ***Transfer current***

- fused 2.5 A (double, Power wire + Ground wire)

### ***Output current***

- maximum continuous: 3 A
- peak (<10 S): 4.5 A

### ***Short circuit and thermal protected module***

### ***Voltage supply***

17 V to 32 V

### ***Dimensions***

78 mm X 55 mm x 26 mm (HxWxD)

3.07 in x 2.16 in x 1.02 in (HxWxD)

Installation date: . . / . . / . . . .

Dealer: . . . . .

***Dealer stamp:***



***Serial number sticker***

