



## Joystick Interface e-fix 25

P002-33

### Contact & Product

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***User & Installation manual***

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## 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 e-fix 25 interface is intended to be fitted on any power wheelchair with the e-fix 25 drive package to connect a mo-Vis Omni compatible device.

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.

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 e-fix 25 interface, integrated cabling included, is a non-serviceable part.

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

## 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 E-fix 25 interface 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 e-fix 25 interface**

### **Intended use**

The e-fix 25 interface can be used to connect any mo-Vis Omni joystick to a power wheelchair with the e-fix 25 drive package.

Do not use the device to connect any non mo-Vis Omni device.

### **Indicator LED**

When in use, a green LED on e-fix 25 interface indicates the proper functioning of the unit.

### **Connections**

The following connections are available on the e-fix 25 interface:

- 9-pole sub-d connector to connect a mo-Vis Omni Joystick.
- Red and green jack socket of 3.5 mm to switch on/off the e-fix system.
  - The red jack socket is to plug in the red plug of the Omni joystick
  - The green jack socket can be used to connect to the e-fix optibox (3.5 mm jack mono extension lead not included). This switches the power supply.

## Installation instructions

### Preparations

#### **Qualified service engineer**

Only a qualified service engineer may install the Joystick interface e-fix 25.

#### **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**

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

### Connecting the cabling to the Joystick e-fix 25 interface



#### **WARNING!**

*All wheelchair electronics must be switched off before connecting any cabling.*

To connect the cabling to the Joystick e-fix 25 interface, proceed as follows:

1. Place the unit according to the installation plan on the wheelchair.



**WARNING!**

*Firmly secure the unit to the wheelchair.*

*You can e.g. use Velcro or double-sided tape on the back of the unit.*

2. Connect the Omni Joystick cabling to the Omni Joystick input. Insert the Sub-d plug into the sub-d connector, and the red jack plug into the red jack socket.



3. If needed to switch the power supply, connect the green socket with a 3.5 mm jack mono extension lead to the e-fix optibox.
4. Guide and secure 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.*

5. Insert the e-fix connection cable of the e-fix 25 interface into the wheelchair e-fix 25 system to connect the device.
6. Switch the wheelchair electronics on.  
The green LED on the unit switches on.
7. If needed, use the dial on the e-fix 25 Joystick to set the speed. By default, the e-fix 25 interface is programmed to take the original speed potentiometer of the joystick.
8. Connect the e-fix 25 interface to a PC with the mini USB connection. Calibrate and configure the joystick with the Configurator software.
9. Test the usage of the joystick according to the joystick test plans.



Whenever connecting or replacing a mo-Vis joystick it is advised to calibrate and configure the joystick with the mo-Vis Configurator software.

- This software must be installed and ready to use on a pc.
- Depending on your profile (user, attendant, dealer, OEM), you will be able to change a number of parameter settings.

### **Connecting with the mo-Vis Configurator software**

1. Connect the e-fix 25 interface to a PC with the mini USB connection. A connection cable is not supplied.
2. Switch the e-fix on
3. Activate the Configurator software.

### **Calibrating**

4. In the mo-Vis Configurator software, go to the section Diagnostics.
5. Select the option 'Field Diagnostic Test'.
6. Leave the joystick centred until the message 'D301 move joystick' appears.
7. Slowly move the joystick in a circular ay (3-4 sec for a complete circle) until the message 'D390 Test Passed' appears.

### **Configuring**

Check the mo-Vis Configurator Software to see the available parameters. Below you can find an overview of the current available parameters.

Parameter	Available values	Description
Joystick rotation	No rotation (default)	Standard mounting
	Rotate 90 CW Rotate 180 CW Rotate 270 CW	Joystick is mounted 90, 180 or 270 degrees clockwise
	DeadBand	When the deflection is below this value, a zero signal will be at the output. This holds the wheelchair still when the joystick is in neutral.
	0...10% default: 5%	

Parameter	Available values	Description
Mode Button Action	No action (default)	The interface is always active
	Activate	The interface is only active when the mode button (connected to the joystick) is pressed during start-up of the wheelchair.  If not pressed, the standard wheelchair joystick is activated.
	DeActivate	The interface is not active when the mode button (connected to the joystick) is pressed during start-up of the wheelchair.  If pressed, the standard wheelchair joystick is activated.

# Using the Joystick Interface e-fix 25

## Use conditions

The e-fix 25 interface 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.

## Error codes

When a fault occurs, the LED of the e-fix 25 interface will start to flash. A long delay is followed by a number of flashes with a short delay. Count the number of flashes and look up the according error message in the table below.

Flash count	Reason	Required action
2	Connection	Check e-fix cable, replace PCB interface
4	Joystick	Check cable to the joystick and/or replace joystick
6	ADC	Replace PCB interface
7	Diagnostic failed or not done	Redo tests and/or replace PCB
8	CPU fault	Replace PCB
9	Scheduler fault	Update Software or Replace PCB
10	Coding Error	Update Software or Replace PCB

## Fault log

A fault log with counters is maintained. The fault log can be accessed by the configurator (Dealer Level). Below is an overview registered faults.

Fault	Reason	Required action
CPU Error RAM	CPU consistency check failed.	Replace PCB
CPU Error FLASH		
CPU Error EEPROM		
Run Error Scheduler	Firmware consistency check failed.	Update Software or Replace PCB
Code Error Framework		
Code Error Application		

MSP Command Corrupt	Corrupt command was received.	Connection with the PC (Configurator program) went wrong, try again.
MSP Command Unknown	Unknown command was received.	
MSP Sub Command Unknown	Unknown Sub Command was received.	
MSP Argument Invalid	Invalid argument received.	
MSP Device Not Ready	Device as not ready to receive an MSP command.	
MSP Device Wrong State	The device is not able to receive a command in the current device state.	
PCB Test Failed	Factory test failed.	A fault occurred during factory testing.
Assembly Test Failed		
Field Test Failed	Field test failed (Calibration).	A fault occurred during field testing (Calibration).
Test Flag Check	One or more test flags not set.	Redo tests and/or replace PCB.
ADC	ADC Conversion error.	Replace PCB interface
Output	The OMNI outputs are out of spec.	Check E-fix cable, replace PCB interface
Joystick	The Joystick is faulty	Check cable to the joystick and/or replace joystick

## 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 e-fix 25 interface is maintenance-free. Under regular use circumstances, the unit does not require additional maintenance.

## Technical data

### ***Name***

- E-fix 25 interface (P002-33)

### ***Compatibility***

- mo-Vis Omni Joystick compatible

### ***Connections***

- E-fix 25 male connector
- Omni (SUB D9) female chassis connector
- 3.5mm mono jack socket (red)
- 3.5mm mono jack socket (green)
- Mini USB

### ***Power***

- Consumption in active mode: 5.2mA (no Omni joystick connected)
- Omni port 12V supply max. 100mA
- Supply voltage : 16V to 36V

### ***Dimensions***

26 mm X 74 mm x 51 mm (HxWxD)

1.02 in x 2.91 in x 2.01 in (HxWxD)

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

Dealer: . . . . .

***Dealer stamp:***



***Serial number sticker***

