Installation manual

Edition 5, July 2021

Scoot Control

P015-61 Scoot Control R-net

mo-vis
moving forward together

Contents

About this manual

Installation manual

This manual contains **useful and important information** about your device. **Please read it carefully before use and store safely for future reference**.

Our team will be happy to answer your questions.

mo-vis bv

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CE

Important information

CAUTION: 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 installation manual, paying particular attention to the safety instructions and warning texts.

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

Warranty

mo-vis bv warrants the product to be free from defects in material and workmanship for a period of 2 years under proper use, care and service. The dealer should never keep mo-vis products in stock for a period more than 6 months prior to delivery to the end-user. mo-vis' warranty will never exceed a period of 2 years and 6 months after shipment.

All warranties do not extend beyond the initial purchaser from an authorized mo-vis dealer or mo-vis itself.

Repair and replacement

For warranty service, contact your dealer (or us if bought directly). In the event of a defect in material or workmanship, the dealer or customer must obtain a Return Merchandise Authorization (RMA) number from us. 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.

Amendments

No person is authorized to alter, extend or waive the warranties of mo-vis.

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. joystick handles, pads, …) are not covered in the warranty except as it applies to defects in material or construction.

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 authorized dealer. This product 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.

Technical support

TROUBLE:

In case of technical problems:

1. Contact mo-vis at contact@mo-vis.com or +32 9 335 28 60.
2. Always state the device serial number when contacting us. This ensures you are provided with the correct information.

Warning labels

Please read this manual, the safety instructions and warning texts carefully, in order to reduce the risks associated to the device. Our products are safe under normal and reasonably foreseeable operating conditions.

NOTE: This symbol indicates general notes and information.

CAUTION: This symbol indicates caution for a hazardous situation that, if not avoided, could result in minor or moderate injury.

WARNING: This symbol indicates a warning for a hazardous situation that, if not avoided, could result in death or serious injury.

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: 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. In case of doubt, contact mo-vis.

WARNING: The device should always be tested without any person sitting in the wheelchair after every alteration of the physical installation or adjustment of the parameters.

Preparations

CAUTION: Before you start with the installation:

- Please check the packaging and verify that all items are included.
- Make sure that you have all the necessary documentation and knowledge to install this device.
- Check the condition of the device.

Qualified service engineer

Only a qualified service engineer may install the device.

CAUTION: An incorrect programming of the wheelchair electronics may cause damage to the devices, or injury to the user.

Tools

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

CAUTION: Do not tighten the screws with excessive force.

Installation plan

Set up an installation plan before beginning the installation. Based on the users' needs and capabilities, this plan should take into account:

- At which position (height, inclination ...) the Scoot Control should be placed.
- How the Scoot Control will be operated: see Configuration on page 17
- A robust and reliable positioning. Hard or sudden movements of the wheelchair may not disorganize the installation.

WARNING: Protect the device against bumps. Mind damaging the unit and wiring. Make sure that cabling is mounted in such a way that excessive wear and tear is avoided.

CAUTION: Avoid hitting obstacles during driving.

CAUTION: Any connection must always be secured with all delivered screws. Only use the screws provided in the package.

Installation

1 Mount the unit with suited mounting parts at the desired location. If necessary, adjust the angle and the height of the handlebar to fit the user's position.

> ⚠ **CAUTION:** You can adjust the position of the handlebar by loosening the screws at the sides of the handles. Afterwards, screw them up again with a maximum torque of 1Nm.

> ⚠ **CAUTION:** Always respect the indicated torque.

2 Place and secure all cabling on the wheelchair.

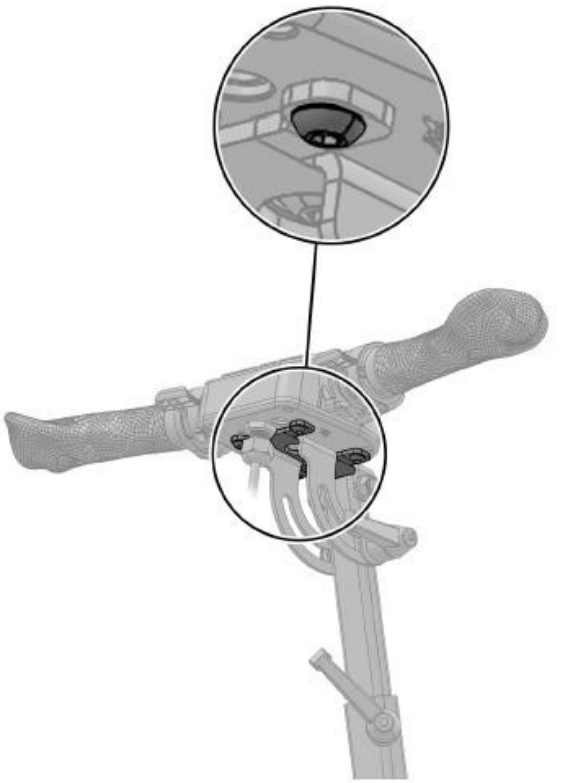
3 Connect the cabling to the wheelchair electronics.

> ⚠ **WARNING:** All wheelchair electronics must be switched off during installation.

Mounting bracket

There are two dedicated mounting parts available for the Scoot Control:

- M015-70 Scoot Control Bracket Set
- M015-71 Scoot Control Bracket Set Short



NOTE: Fixation of the Scoot Control on the bracket with 4 screws (supplied with the bracket): torque 5Nm.

Actuator Keypad

You can connect an external Curtiss-Wright CJSM2 compatible Actuator Keypad to the Scoot Control to control the actuators of the power chair.

See the *Scoot Control User Manual* or contact mo-vis for an overview of the Scoot Control parts and accessories.

Please refer to the *Curtiss-Wright manual SK77981-14 | R-net Technical Manual* for actuator settings and controls.

In the Scoot Control default settings, a key press will send an axis command to the R-netsystem.

NUMBER	ACTION
1	Axis 1 moves UP
2	Axis 1 moves DOWN
...	...
9	Axis 5 moves UP
10	Axis 5 moves DOWN

A parameter is available to control 10 axes instead of 5 (see On-board configuration on page 20 for more information).

NUMBER	ACTION
1	Alternating UP - DOWN movements of Axis 1
2	Alternating UP - DOWN movements of Axis 2
...	...

NUMBER	ACTION
9	Alternating UP - DOWN movements of Axis 9
10	Alternating UP - DOWN movements of Axis 10

Configuration

R-net configuration

R-net parameters for default settings

Please set the following parameters in **R-net** before using the Scoot Control:

- **Controls** > **Global** > **Power-up Mode**: set this parameter to **Drive** to make sure that you start in the Drive mode when you switch on the Scoot Control.
- **Profile Management** > **Input Device Type**: set this parameter to **Attendant** and choose **No** for **Allow grab**.

See the *Curtiss-Wright manual SK77981-14 | R-net Technical Manual* for more information.

Using the Scoot Control as Attendant Input Device Type

If the Scoot Control is set as **Attendant**, then the Scoot Control will always start up in the last used profile.

When you press S6 for more than 2 seconds, the **Attendant Profile** will grab the focus. You have **no access to the modes**.

When you press S6 again for longer than 2 seconds, you go back the last used profile and **give the focus back** to the person in the wheelchair.

By default the parameter **Controls** > **Global** > **Profile Button** is set to **Profiles/ Modes** in R-net.

NOTE: When you use the Scoot Control as **Attendant Input Device Type**, the attendant **does not have direct access to the modes**. If the attendant wants to adjust the lifts of the power chair, you will have to add an external Curtiss-Wright CJSM2 compatible Actuator Keypad (see Actuator Keypad on page 14).

Using the Scoot Control as Universal Input Device Type

If the attendant wants access to the modes, then you have to set the Scoot Control as **Universal** joystick.

To achieve this, proceed as follows:

- In R-net, set **Profile Management** > **Input Device Type** to **Universal**.
- Change parameter 5 to **Universal**: see On-board configuration on page 20 .

NOTE: It is very important that you change the settings both in the Scoot Control (on-board configuration) and in R-net. Otherwise the Scoot Control will not function properly.

If the Scoot Control is set as **Universal**, then the Scoot Control will always start up in the last used profile.

When you press S6 for more than 2 seconds, you scroll through the profiles **and the mode**s. You can drive in every profile and you can change the seating positions.

To change the seating positions with the Scoot Control:

- Press S6 for more than 2 seconds. You will now scroll through the profiles and the modes. Stop at the seating mode.
- In the seating mode, you can scroll through the different actuators by pressing the handlebar gently. Stop at the desired actuator.
- Move the actuator by pushing the left and right throttle (the actuator will move up/down according to the settings of both throttles).

Using the Scoot Control as Universal Input Device Type, but limiting access to the modes

It is possible that you want to use the Scoot Control as a **Universal** joystick, but you want the user but **not** the attendant to have access to the seating positions.

In that case, proceed as follows:

- Make sure that **Controls** > **Global** > **Profile Button** is set to **Profiles/ Modes** in R-net.
- Change parameter 4 to **Profile**: see On-board configuration on page 20 .

NOTE: It is very important that you change the settings **both** in the Scoot Control (on-board configuration) **and** in R-net. Otherwise the Scoot Control will not function properly.

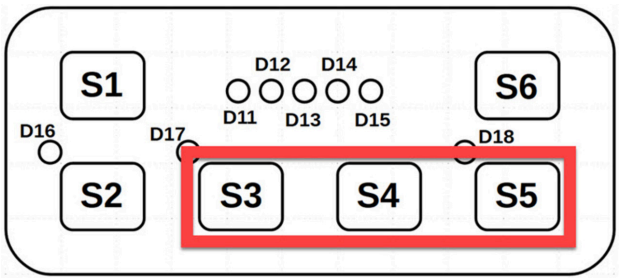
On-board configuration

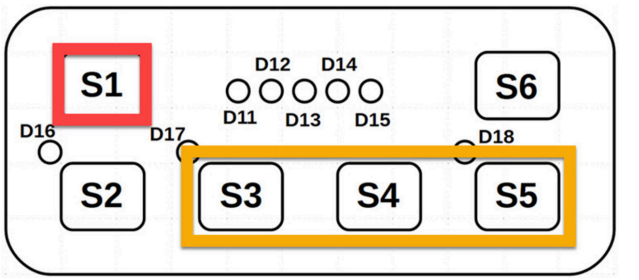
A number of parameters can be changed on-board, without the use of the mo-vis Configurator Software or peripheral devices.

WARNING: Altering the parameters should only be executed by a qualified service engineer.

Enter on-board programming mode

Proceed as follows:

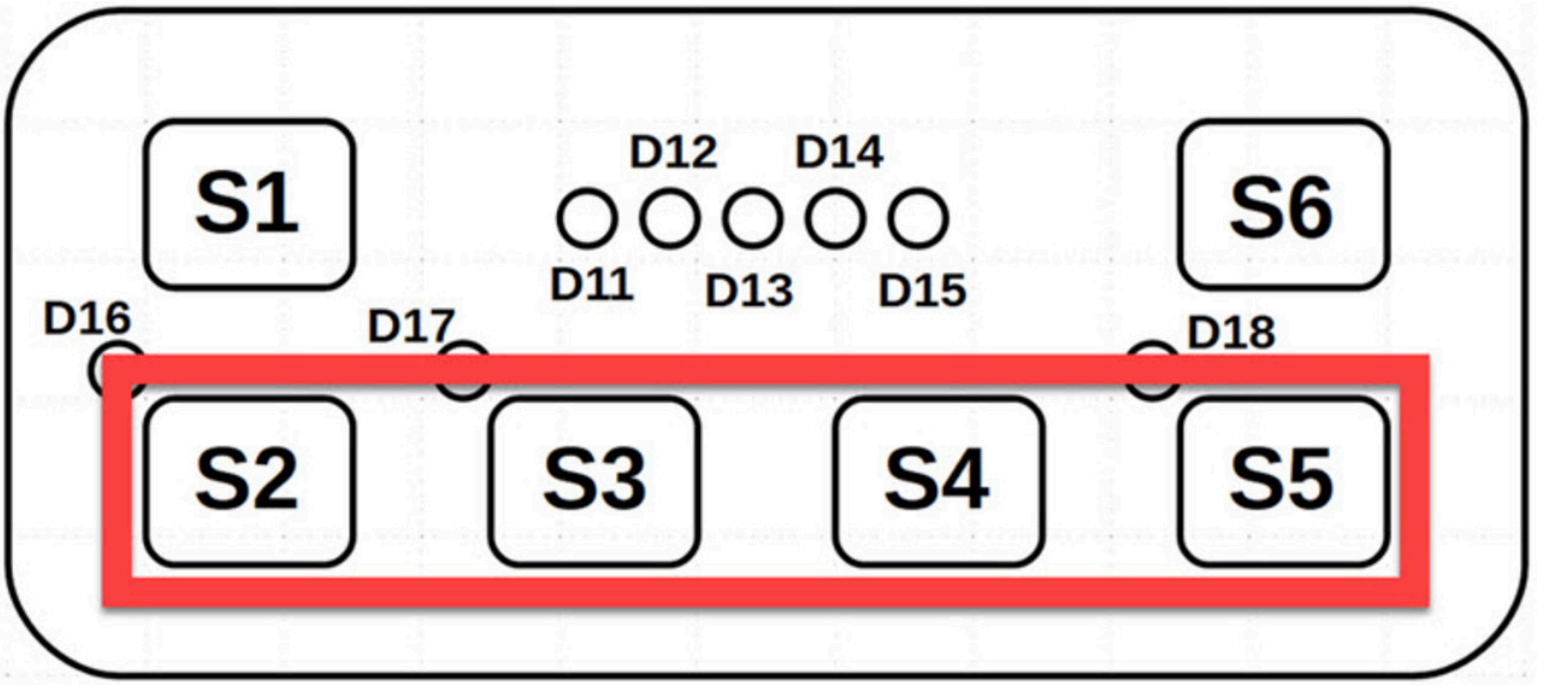
STEP	ACTION	BUTTONS
1	Verify that the R-net system is switched off.	
2	Simultaneously press S3, S4 and S5.	

STEP	ACTION	BUTTONS
3	While S3, S4 and S5 are pressed, switch the Scoot Control on using S1.	
4	Keep S3, S4 and S5 pressed, while you wait for the beep (5-second delay).	
5	Release all buttons within 2 seconds after the beep. **Result:** You are now in on-board programming mode.	

If the steps are not followed correctly, you will enter or abort the programming process. In that case, D11 - D15 will be flashing red.

Select/change a parameter

Use the following buttons to select/change a parameter:



BUTTON	ACTION
S2	Select previous parameter
S3	Select next parameter
S4	Decrease value
S5	Increase value

The LEDs of the battery gauge (D11 - D15) indicate the selected parameter/ value:

- Parameter: when the LEDs are green they show parameters 1 to 5.
- Value: when the LEDs are orange the show the parameter *value* 1 to 3.

Save/discard changes

Press S6 to save the changes. All LEDs of the battery gauge will flash green. Turn the device off and on again.

If the device is switched off without pressing S6, the changes will not be saved.

Parameter settings

There are 5 available parameters:

PAR. NUMBER	PAR. VALUE	ACTION (DEFAULT SETTING IN BOLD)	DESCRIPTION
1 = Right throttle	1	None (no movement of the wheelchair when you push the throttle)	Adjust the default direction of the throttle(s).
	2	**Forward**	
	3	Reverse	
2 = Left throttle	1	None (no movement of the wheelchair when	Adjust the default direction of the

PAR. NUMBER	PAR. VALUE	ACTION (DEFAULT SETTING IN BOLD)	DESCRIPTION
		you push the throttle)	throttle(s).
	2	Forward	
	3	**Reverse**	
3 = Actuator Keypad settings (optional)	1	**Single** (each button on the Actuator Keypad will move the actuator in one direction)	See Actuator Keypad on page 14 for more information.
	2	Toggle (each button on the Actuator Keypad will move the actuator alternating up and down	
4 = **Profile/Mode**	1	**Standard**: uses the R-net settings	This parameter is only useful, when parameter 5 = Allow grab on page 25 **Allow grab** is set to **Universal**. With this parameter, you can choose to overrule the R-net
	2	**Profile** (only profiles are accessible)	
	3	**Profile/Mode** (profiles and modes are always both accessible)	

PAR. NUMBER	PAR. VALUE	ACTION (DEFAULT SETTING IN BOLD)	DESCRIPTION
			settings. See R-net configuration on page 17 for more information.
5 = **Allow grab**	1	**Attendant**	Control the possibilities of the attendant and the user. See R-net configuration on page 17 for more information.
	2	**Universal**	

Testing

After installation of the device, execute the following tests before the wheelchair is delivered or put into service, in according order:

1 Check the Scoot Control for intactness on page 26

2 Operational test on page 26

3 Test drive on page 29

4 Stop test on page 29

Check the Scoot Control for intactness

Check whether:

1 The device is not bent or damaged.

2 Housing, cabling and all connectors are not damaged.

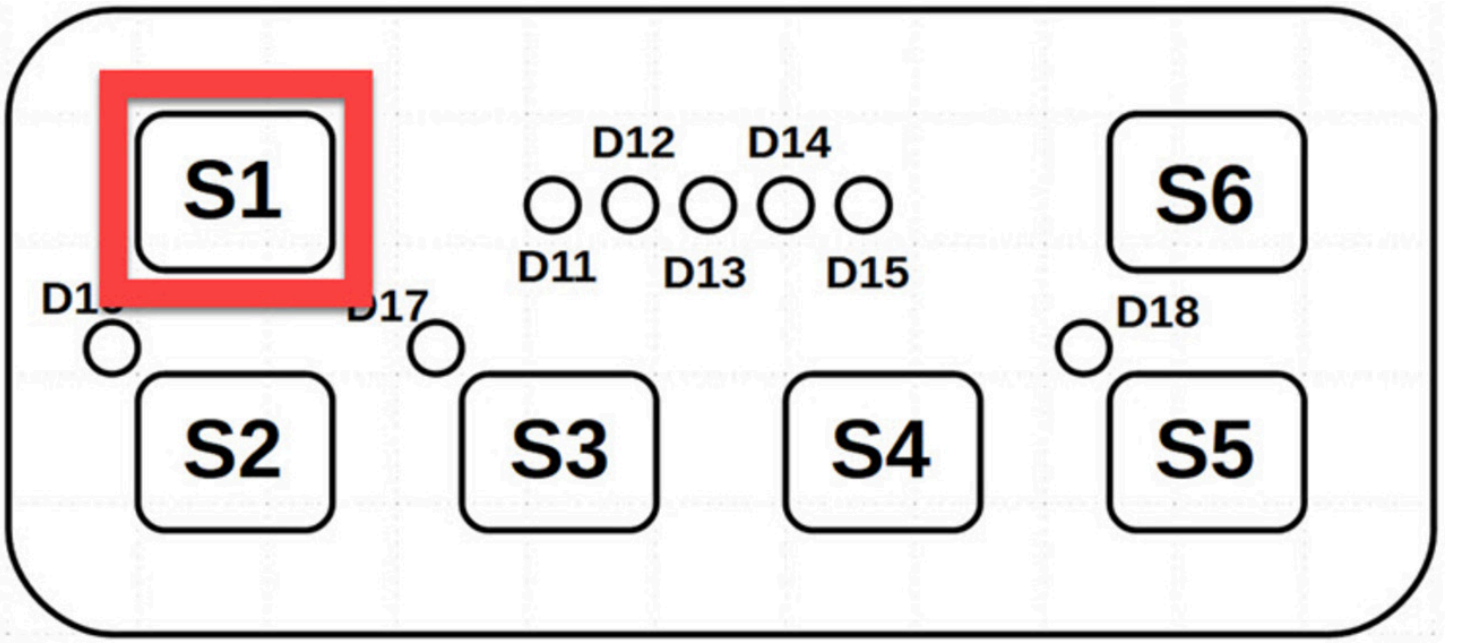
3 The handlebar and throttles return to their default position when moving them respectively to the left and right and up and down.

Operational test

CAUTION: Execute this test only on a level surface, with at least one metre of free space around the wheelchair.

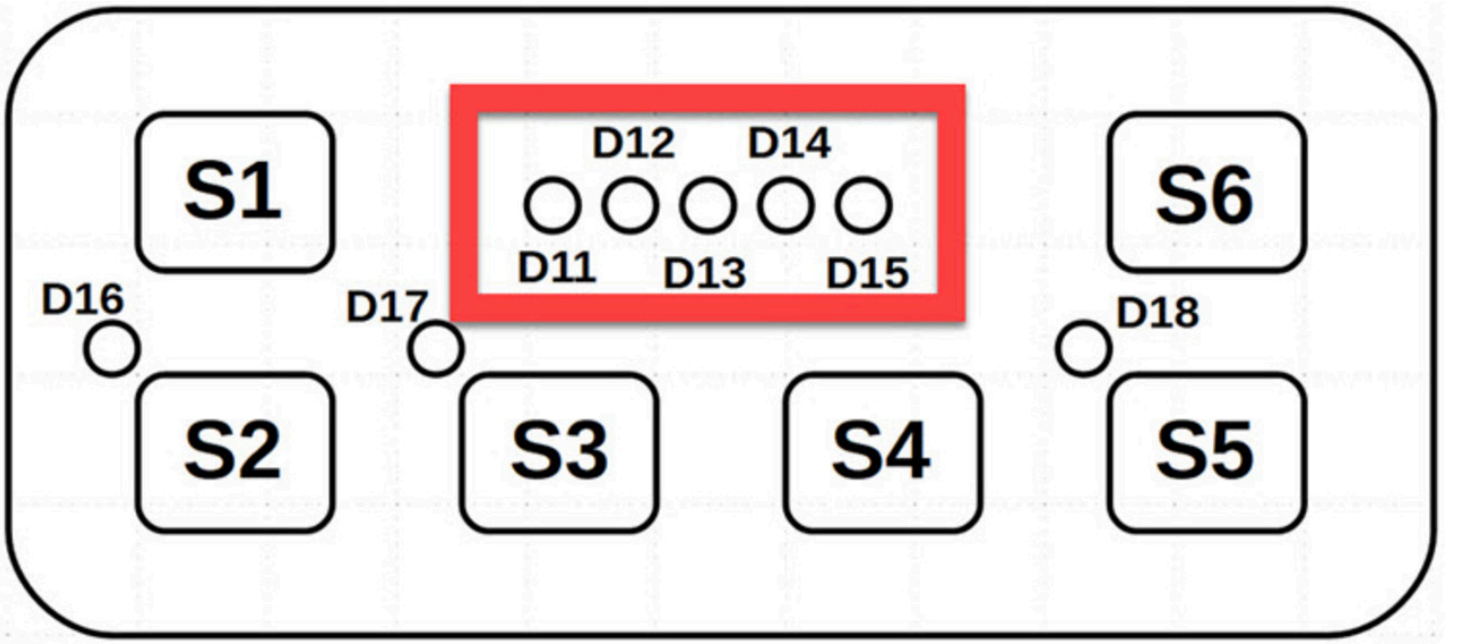
CAUTION: The wheelchair may start to move during the test.

1 Press S1 to activate the Scoot Control and the power chair.



2 Check for any error message.

TROUBLE: You can recognize an error on-board, when D11 and D15 are red, D12 and D14 are off and D13 flashes. The number of flashes indicates the error. See Error codes on page 37



3 Move the handlebar slowly to the a side until you hear the parking breaks switch off.

4 Immediately release the handlebar. You should hear the parking break react within a few seconds.

5 Repeat 3 and 4 three times for both sides.

6 Move the throttle slowly down until you hear the parking breaks switch off.

7 Release the throttle. You should hear the parking break react within a few seconds.

8 Repeat 6 and 7 three times for both throttles.

9 Check whether the power on/off button S1 functions properly.

Test drive

Do a test drive with the wheelchair.

1 Check whether the power chair and all its functionalities workcorrectly in all positions the user/attendant may use the Scoot Control.

2 Check whether cables or parts may not get damaged or hindered in any possible position of the wheelchair.

Stop test

Drive full speed ahead and shut down the wheelchair with the power on/off switch.

The wheelchair may not suddenly stop, but must slow down to a gradual stop.

First time use

During first time use by the user, it is advised that the dealer or service engineer assists and explains the different possibilities to the user and/or his attendant. If needed, the dealer can make final adjustments.

> ⚠ **CAUTION:** It is important that the customer is fully aware of the installation, how to use it and what can be adjusted to optimize his/her experience.

As a dealer, proceed as follows:

1 Explain and show the customer how you have executed the installation and explain the functionality of every (new) button.

2 Have the user test all positions of the device. If needed, adjust the (position of the) device.

- Is the Scoot Control and its buttons within easy reach?
- Can the user safely operate the power chair with the least effort?
- Is the placement of the device in all available positions optimal for the user?

3 Explain the possible problems and how to address them, to the user.

4 Draw the user's attention to the following:

WARNING: A functional test is needed when the LED light flashes and/or after every incident with the wheelchair or the mo-vis device.

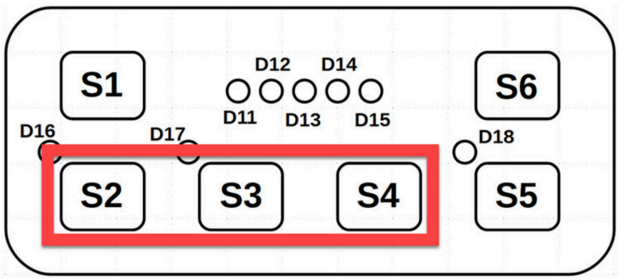
WARNING: The device should never be covered or blocked in order to avoid uncontrollable behavior of the joystick and/or the wheelchair.

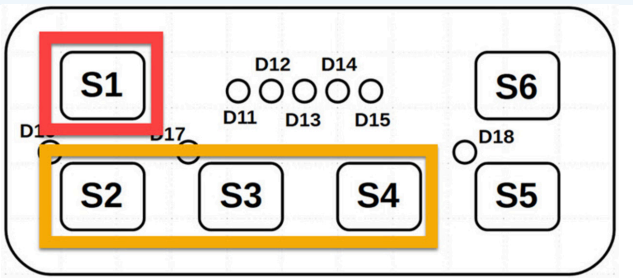
Calibration

CAUTION: After every change or repair of the device, a qualified service engineer should recalibrate the device in order to guarantee a proper functioning. Otherwise, you should only recalibrate when you experience asymmetrical movements.

Enter the on-board calibration mode

Proceed as follows:

STEP	ACTION	BUTTONS
1	Verify that the R-net system is switched off.	
2	Verify that the throttles and steering bar are in neutral.	
3	Simultaneously press S2, S3 and S4.	
4	While S2, S3 and S4 are	

STEP	ACTION	BUTTONS
	pressed, switch the Scoot Control on using S1.	
5	Keep S3, S4 and S5 pressed, while you wait for the beep (5-seconds delay).	
6	Release all buttons within 2 seconds after the beep. **Result:** You are now in on-board calibration mode.	

If the steps are not followed correctly, you will enter or abort the calibration process. In that case, D11 - D15 will be flashing red.

Execute on-board calibration

The calibration process consists of multiple stages:

- The stage number is indicated by the number of LEDs (D11 - D15) in green.
- Each stage can have multiple steps.

- Every time you hear a beep, you should release the handlebar. Only proceed to the next action when you see that the corresponding LED is turned on.

STEP	ACTION	RESULT
1	Push right throttle fully down and wait for beep.	Beep
2	Release the right throttle.	LED D11-12 green
3	Push left throttle fully down and wait for beep.	Beep
4	Release left throttle.	LED D11-13 green
5	Place both hands on the handlebar and push the right handle as far back as possible, while you wait for the beep.	Beep
6	Bring the handlebar back to the neutral position.	LED D11-14 green
7	Place both hands on the handlebar and push the left handle as far back as possi-ble, while you wait for the	Beep

STEP	ACTION	RESULT
	beep.	
8	Bring the handlebar back to the neutral position.	Calibration was successful when LEDs D11-15 are all green. Calibration data is stored in the device. When the LEDs are red, calibration failed and no data is stored in the device. Repeat the entire process.

⚠ **CAUTION:** If the calibration was successful, please proceed to check if the movement of the wheelchair is symmetrical when moving the handlebar to both sides. Check if the device returns to its default position.

Maintenance

The device is maintenance-free. Under regular circumstances of use, the device and different parts do not require additional maintenance. Please refer to the *User Manual* of the device for cleaning instructions.

⚠ **WARNING:** As dust and dirt could lead to reduced functionality, all parts of the device should be cleaned on a regular basis (monthly) or whenever needed.

Monthly inspection

Monthly, or whenever needed, check whether:

- All bolts and screws are still firmly tightened.
- There is no damage to any wiring.
- There is no excessive wear to any of the parts.

Yearly inspection

We advise to have at least yearly a full check of the wheelchair and its operating systems by a qualified service engineer.

Error codes

TROUBLE: When a fault occurs, the LED of the Scoot Control 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 in the table below.

FLASH COUNT	REASON	REQUIRED ACTION
1	-	-
2	Hall sensor left	Replace sensor board and calibrate.
3	Hall sensor right	
4	Throttle left	Replace throttle sensor and calibrate.
5	Throttle right	
6	Test flag failed	Redo diagnostic tests.
7	CPU fault	Replace PCB.
8	Code fault	Update firmware. Replace PCB.
9	Software watchdog	
10	R-net failure	Check R-net configuration. Check fault log in the R-net PC program-

FLASH COUNT	REASON	REQUIRED ACTION
		mer.
11	Diagnostic test	Test failed, redo test.

Fault log

TROUBLE:
The system maintains a fault log with counters. The fault log can be accessed via the Configurator Software (dealer level). To do that, please contact mo-vis for further instructions.

FAULT	REASON	REQUIRED ACTION
CPU error RAM	CPU consistency check failed.	Replace PCB.
CPU error FLASH	CPU consistency check failed.	Replace PCB.
CPU error STACK	CPU consistency check failed.	Replace PCB.
CPU error EEP-ROM	CPU consistency check failed.	Replace PCB.
Watchdog reset	The watchdog kicked in.	Update firmware or replace PCB.
Hard fault	A hard fault in the CPU.	
Unexpected	An invalid case occurred.	Update firmware or

FAULT	REASON	REQUIRED ACTION
case		replace PCB.
Null pointer	An invalid pointer occurred.	
Unexpected value	Unknown command was received.	Update firmware or replace PCB.
Out of bounds	Access to an invalid memory location.	
MSP slave	Communication problem.	Connection with the PC (Configurator Software) went wrong. Update firmware or update Configurator Software. Try again.
PCB test	Factory test failed.	A fault occurred during factory testing.
Field test	Field test failed (calibration).	A fault occurred during field testing (calibration).
Test flags	One or more test flags not set.	Redo tests and/or replace PCB.
Software wdt	Software watchdog.	Update firmware.

FAULT	REASON	REQUIRED ACTION
		Replace PCB.
Hall sensor left	The left sensor is faulty.	Replace sensor and calibrate.
Hall sensor right	The right sensor is faulty.	
Throttle left	The left throttle is faulty.	Replace throttle and calibrate.
Throttle right	The right throttle is faulty.	
R-net trip code	There is an R-net trip code.	Check R-net fault on joystick display or in the R-net PC Programmer.

R-net trip codes

TROUBLE:

When a fault is detected by the device, an R-net trip code will be generated. The trip code will be shown on the joystick (if it is present and equipped with a graphic display). The trip code will also be logged in the R-net system and can be investigated using the R-net PC Programmer.

If you want to learn more about trip codes, see the *Curtiss-Wright manual | SK77981-14 R-net Technical Manual*.

R-NET TRIP CODE	REASON	REQUIRED ACTION
9600	Uart overflow	Update firmware or replace PCB.
9601	Uart underflow	
9602	Packet transmission exceeded maximum number of retries	Update firmware or replace PCB.
9603	TX handle overflow	
9604	RX handle overflow	Update firmware or replace PCB.

R-NET TRIP CODE	REASON	REQUIRED ACTION
9605	Invalid sequence number	
9606	Ack number does not match	Update firmware or replace PCB.
9607	Invalid packet descriptor	
9608	Incorrect R-net version	Update firmware or replace PCB.
9609	Chip tripped	
960A	Invalid response when access-ing a file	Update firmware or replace PCB.
9620	CPU error	
9621	Code error	Update firmware or replace PCB.
9640	One or more test flags not set	Redo tests and/or replace PCB.
9641	Software watchdog	Update firmware or replace PCB.
9642	There was a problem during the preparation of the R-net system	Check R-net fault on joystick display or in the R-net PC program-mer. Check R-net con-

R-NET TRIP CODE	REASON	REQUIRED ACTION
		figuration.
9643	Left sensor is faulty	Replace sensor board and calibrate.
9644	Right sensor is faulty	
9645	Left throttle is faulty	Replace throttle and calibrate.
9646	Right throttle if faulty	
9647	There is an R-net trip code	Check R-net fault on joystick display or in the R-net PC programmer.
9648	Factory test failed	A fault occurred during factory testing.
9649	Field test failed (calibration)	A fault occurred during field testing (calibration).
9800	API_MSG_SEND_TO_FREQUENTLY	Update firmware or replace PCB, check R-net configuration.
9801	API_MSG_DATA_OUT_OF_RAN	

R-NET TRIP CODE	REASON	REQUIRED ACTION
	GE	
9802	API_MSG_ID_UNKNOWN	Update firmware or replace PCB, check R-net configuration.
9803	API_MSG_DATA_INCORRECT_AMOUNT	
9804	API_MSG_TOO_SHORT	Update firmware or replace PCB, check R-net configuration.
9805	API_MSG_TOO_LONG	
9806	API_MSG_NOT_ENABLED	Update firmware or replace PCB, check R-net configuration.
9807	API_RESPONDED_OUT_OF_TIME	
9808	API_MSG_REQUIEREMENT_WRONG	Update firmware or replace PCB, check R-net configuration.
9809	API_MSG_INVALID_IN_CURRENT_STATE	
9810	DATA_PACKET_WITH_INVALID_SEQ_NR	Update firmware or replace PCB, check R-net configuration.
9811	ACK_PACKET_WITH_INVALID_S	

R-NET TRIP CODE	REASON	REQUIRED ACTION
	EQ_NR	
9812	INVALID_HEADER	Update firmware or replace PCB, check R-net configuration.
9813	PACKET_TIMEOUT	
9814	CHIP_INT_ERR0	Update firmware or replace PCB, check R-net configuration.
9815	CHIP_INT_ERR1	
9816	HOST_RESTART_AFTER_CORRECT_INIT	Update firmware or replace PCB, check R-net configuration.
9817	HOST_INCOMPATIBLE_SERIAL_PROTOCOL_VERSION	
9820	CHIPSET_INTERNAL_QUEUE_OVERFLOW	Update firmware or replace PCB, check R-net configuration.
9821	CHIPSET_HEARTBEAT	

Technical data

Product description and code

- P015-61 Scoot Control R-net
- M015-70 Scoot Control mounting bracket
- P015-65 Scoot Control R-net bundle
- M015-71 Scoot Control short mounting bracket
- P015-66 Scoot Control R-net bundle short
- P016-98 Actuator Keypad Button R-net CJSM2
- P016-99 Actuator Keypad Paddle R-net CJSM2
- P016-88 Actuator Keypad Button R-net CJSM2
- P016-89 Actuator Keypad Paddle R-net CJSM2
- M015-91 Scoot Control keypad bracket set

Device connectors

- 3.5 mm stereo jack (actuator panel)
- mini USB connection (internal)
- R-net wheelchair connector

Specifications

Factor	Specification
Electronics	Curtiss-Wright R-net compatible
Input keypad	Curtiss-Wright CJSM2 compatible keyboard (34E)
Cable length	Pigtail 600 mm - 23.62 in R-net male pin connector
Throttle force	300 g - 10.58 oz (3000 g - 6.61 lb safe overload)
Keyboard force	100 g - 3.53 oz (1000 g - 55.12 lb safe overload)
Handlebar force	2500 g - 5.51 lb (25.000 g - 55.12 lb safe overload)
Weight	1250g - 2.76 lb
Dimensions	450 x 100 x 55 mm - 17.72 x 3.94 x 2.17 in (W x D x H)
Mounting	4 * M6 (8 mm depth) in a square (55 x 55 mm - 2.17 x 2.17 in)

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