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MANUAL

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SLIMdrive-500

LOGICDATA
MOTION FOR YOUR LIFE

Manual SLIMdrive-500

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1 INTRODUCTION

The product documentation consists of this manual and a data sheet.

This document is intended to enable assembly personnel to work safely with the SLIMdrive-500. Assembly personnel must therefore always have the complete documentation available. The document must remain in a complete and perfectly legible condition. Follow the instructions in this document to avoid hazards and prevent damage to the SLIMdrive-500.

The information in this document has been compiled with great care. We strive to ensure the accuracy and completeness of the content by revising it and updating it regularly. However, no guarantee can be given for its accuracy or completeness.

1.1 COPYRIGHT

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All rights reserved. All information in this documentation is protected by copyright. No part of this documentation may be copied or reproduced without the written permission of LOGICDATA. LOGICDATA reserves the right to change specifications and other information in this documentation without prior notice.

1.2 ROYALTY-FREE USE OF IMAGES AND TEXT

After purchase and full payment of the product, the text and graphics in Chapter 2 - “Safety” - may be used free of charge by the customer for a period of 10 years from delivery. It should be used to prepare end-user documentation for the height-adjustable table in which the SLIMdrive-500 was installed. This license does not include logos, design, and page layout elements belonging to LOGICDATA. The customer may make any necessary changes to the text and graphics in order to adapt them to the purpose of the end customer documentation. Texts and graphics may not be changed or sold in their current state, and may not be published or sublicensed digitally. The transfer of this license to third parties without permission from LOGICDATA is excluded. Full ownership and copyright of the text and graphics remains with LOGICDATA. Texts and graphics are offered in their current state without warranty or promise of any kind.

Contact LOGICDATA to obtain text and graphics in an editable format.

1.3 TRADEMARKS

Documentation may include, but is not limited to, the representation of registered trademarks of goods or services, as well as information about copyright or other proprietary expertise of LOGICDATA or third parties. In all cases, all rights remain exclusively with the respective copyright holder.

LOGICDATA® is a registered trademark of LOGICDATA Electronic und Software GmbH in the USA, the European Union, and other countries.

1.4 SYMBOLS AND SIGNAL WORDS USED

⚠ DANGER	**Imminent threat to the lives of persons** Safety notices marked “DANGER” describe imminent danger to the life and health of persons.
⚠ WARNING	**Risk of serious personal injury or material damage** Safety notices marked “WARNING” describe dangerous situations that have the potential to affect the health of persons.
⚠ CAUTION	**Risk of minor personal injury or material damage** Safety notices marked “CAUTION” describe dangerous situations that have the potential to cause minor personal injury or property damage.
NOTE	Texts marked “NOTE” indicate supporting information for installation, operation, servicing, or repair.
	This symbol indicates the risk of damage due to electrostatic discharge (ESD)
	This is a protection class III device

2 SAFETY

2.1 GENERAL SAFETY REGULATIONS AND OBLIGATIONS

In general, the following safety regulations and obligations apply when handling the product:

- Do not operate the SLIMdrive-500 unless it is in a clean and perfect condition
- Do not remove, change, bridge, or bypass any protection, safety, or monitoring equipment
- Do not convert or modify the SLIMdrive-500 without written approval from LOGICDATA
- In the event of malfunction or damage, the SLIMdrive-500 must be replaced immediately
- Unauthorized repairs are prohibited
- Do not attempt to replace hardware unless the device is in a de-energized state
- Only skilled persons are allowed to work on the SLIMdrive-500
- Ensure that national worker protection conditions and national safety and accident prevention regulations are observed during operation of the system

2.2 RESIDUAL RISKS

Residual risks are the risks that remain after all relevant safety standards have been complied with. These have been evaluated in the following risk assessment:

⚠DANGER	**Danger to life due to electrical hazard** Observe the following when handling the SLIMdrive-500 to avoid electrical hazards: • Never open the SLIMdrive-500 linear actuator • Operate the SLIMdrive-500 only with LOGICDATA control boxes • Do not operate the SLIMdrive-500 if the cable is damaged • Damaged cables must be replaced by the manufacturer, or the entire SLIMdrive-500 must be replaced • Disconnect the SLIMdrive-500 from the control box during assembly and disassembly • Do not immerse the cable in liquid • Keep the cable away from heated surfaces • Clean the SLIMdrive-500 only with a dry or slightly damp cloth
⚠CAUTION	**Danger due to exceeding the duty cycle** The SLIMdrive-500 linear actuator is not designed for continuous operation. When adjusting the height of a table top, ensure that the product is not active for longer than duty cycle indicated on the type plate.
NOTE	Connecting unauthorized products to the SLIMdrive-500 is prohibited. Only controls and accessories that have been approved by LOGICDATA may be used in combination with the SLIMdrive-500.
⚠CAUTION	**Danger due to premature commissioning** Do not operate the SLIMdrive-500 until it is properly mounted.
⚠WARNING	**Risk of pinching when changing the table top height** Make sure that there are no persons or objects are in the table's range of movement.
⚠WARNING	**Danger due to improper conversion or modification** Do not convert or modify the SLIMdrive-500.

⚠DANGER	**Risk of explosion** Do not operate the SLIMdrive-500 in potentially explosive atmospheres.
⚠WARNING	**Risk of pinching during the start-up of the drive** During the start-up of the drive, collision protection (ISP) is inactive for 1-2 seconds. The drive moves slightly before shutting off automatically. Ensure that no persons are in the drive's range of movement at this time.
⚠WARNING	**Risk of pinching during reset operations and at the limit position area** Collision protection (ISP) is not active during limit position calibration. There is a risk of pinching. Make sure that no persons or objects are in the drive's range of movement at this time.
⚠WARNING	**Danger from exceeding the lifting capacity** Do not exceed the static or dynamic load limit of the SLIMdrive-500 (see data sheet).
⚠WARNING	**Danger from the spindle system** During installation, the SLIMdrive-500 must be clad in such a way that no contact with the spindle system is possible during operation.
NOTE	The cladding of the SLIMdrive-500 should be constructed in such a way that there is no risk of pinching in the clad areas.
NOTE	When assembling the final product, ensure that the motor cable is routed properly. There must be no risk of tripping or stumbling.
⚠DANGER 	**Danger to life due to electrical hazard** The SLIMdrive-500 is a Protection Class III device. It may only be supplied with safety extra-low voltage (SELV). Read the type plate for exact specifications.

2.3 IMPORTANT NOTES FOR RESELLERS

LOGICDATA defines resellers as companies that purchase the SLIMdrive-500 to install it in their own products.

NOTE	For reasons of EU conformity and product safety, you should provide users of your products with an operating manual in their native EU official language.
NOTE	Your operating manual must include all the safety instructions that end users require in order to handle your product safely.
NOTE	The operating manual for your end product must contain: • An instruction to read the operating instructions before using the product • An instruction to always keep the operating instructions in the immediate vicinity of the product
⚠DANGER	**Other dangers** Perform a risk assessment on your product so that you can respond to potential residual hazards. The assessment may include measures to mitigate risk, or references to the relevant passages in the operating instructions / safety instructions for your product.
NOTE	Ensure that no unauthorized persons (young children, persons under the influence of medications, etc.) are allowed to handle your product.

2.4 SKILLED PERSONS

The SLIMdrive-500 may only be installed and commissioned by skilled persons. LOGICDATA defines a skilled person as:

- A person who is authorized for installation planning, installation, commissioning, or maintenance/servicing of the product
- A person who has read and understood the SLIMdrive-500 documentation
- A person with the relevant technical education, training, and/or experience to perceive risks and avoid hazards
- A person with knowledge of the specialist standards applicable to the product
- A person with the expertise to test, assess, and manage electrical and mechatronic products and systems in accordance with the generally accepted standards and guidelines of electrical engineering and furniture manufacturing

2.5 LIABILITY

LOGICDATA products comply with all currently applicable health and safety regulations. However, risk can result from incorrect operation or misuse.

LOGICDATA is not liable for damage caused by:

- Improper product use
- Disregard of the documentation
- Unauthorized product alterations
- Improper work on and with the SLIMdrive-500
- Operation of damaged products
- Worn parts
- Improperly performed repairs
- Unauthorized changes to the operating parameters
- Disasters, external influence, and force majeure

The reseller assumes responsibility for the LOGICDATA products installed in their applications. They must ensure their product complies with the relevant directives, standards and laws. LOGICDATA shall not be held liable for any damage that is directly or indirectly caused by the delivery, performance, or use of this document.

Resellers must observe the relevant safety standards and guidelines for each product in which the SLIMdrive-500 is installed.

3 PRODUCT

3.1 DESCRIPTION

The SLIMdrive-500 is a spindle drive for electrically height-adjustable tables. It is installed by resellers in a height-adjustable column for electrically height-adjustable tables. It is controlled by a LOGICDATA control box, to which various operating elements can be connected. Several drives can be operated synchronously by one control box.

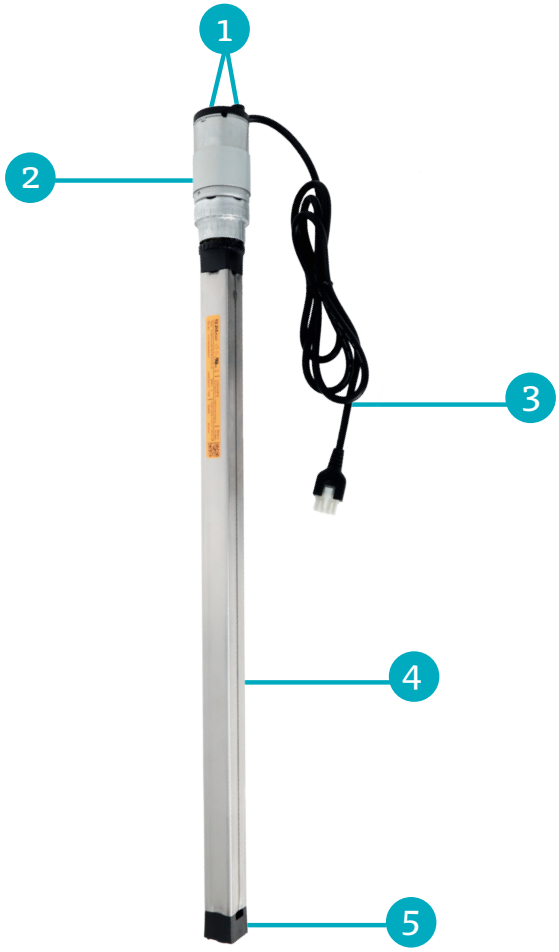

Fig. 1: Construction of the SLIMdrive-500

1	Motor end attachment point (incl. fastening screws with rubber washers)
2	Motor
3	Cable
4	Spindle system
5	Mounting point support tube

3.2 INTENDED USE

The SLIMdrive-500 linear actuator may only be installed and used in telescopic tubes for electrically height-adjustable tables. The intended use is the electric adjustment of a table's height. Only LOGICDATA control boxes that are compatible with the SLIMdrive-500 linear actuator may be used for this purpose.

Use beyond or outside the intended use will void the product's warranty.

Linear actuators must be assembled, commissioned, and checked by qualified personnel.

The basic function is the upward and downward movement of a table top. This function can be executed with all LOGICDATA hand controls.

NOTE	Permissible drive loads and speeds always refer to the product SLIMdrive-500. They do not account for additional load on the table system. Resellers must take additional loads into account. These include: • Friction • Deadweight of the table's components • Torque loads The newly determined permissible load must be specified in the documentation for the final product.

4 SCOPE OF DELIVERY

The standard scope of delivery for the SLIMdrive-500 linear actuator consists of the following components:

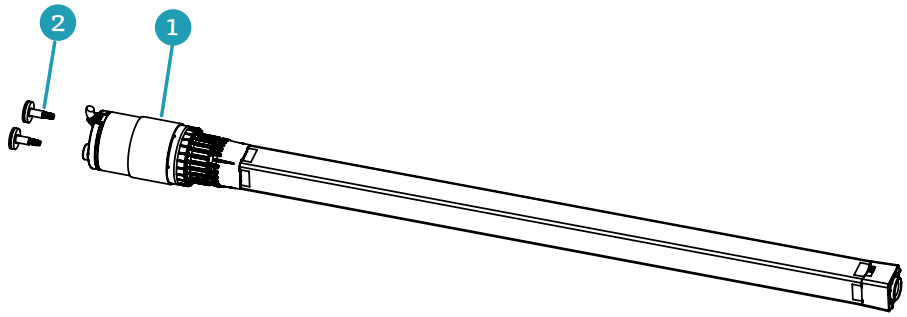

Fig. 2: Scope of delivery

1	SLIMdrive-500 linear actuator
2	Two mounting screws incl. rubber washers (LOG-PRT-SD-MOUNTINGSCREW)

5 UNPACKING

The SLIMdrive-500 linear actuator is packaged in cardboard.

NOTE

Ensure proper ESD handling during unpacking. Damage that can be attributed to electrostatic discharge will void warranty claims.

To unpack the product:

1. Remove the packaging material from the drive components
2. Check the contents of the package for completeness and damage
3. Provide the operating manual to the operating personnel
4. Dispose of the packaging material

NOTE

Dispose of the packaging material in an environmentally friendly manner. Remember to separate plastic parts from the cardboard packaging.

6 ASSEMBLY

6.1 GENERAL ASSEMBLY

NOTE	Before assembly and operation, the SLIMdrive-500 must be acclimatised to the ambient conditions.

NOTE	Ensure proper ESD handling throughout the installation. Damage that can be attributed to electrostatic discharge will void warranty claims.

6.1.1 DRIVE DIMENSIONS

Fig. 3 shows the dimensions of the SLIMdrive-500 linear actuator in its retracted and extended positions.

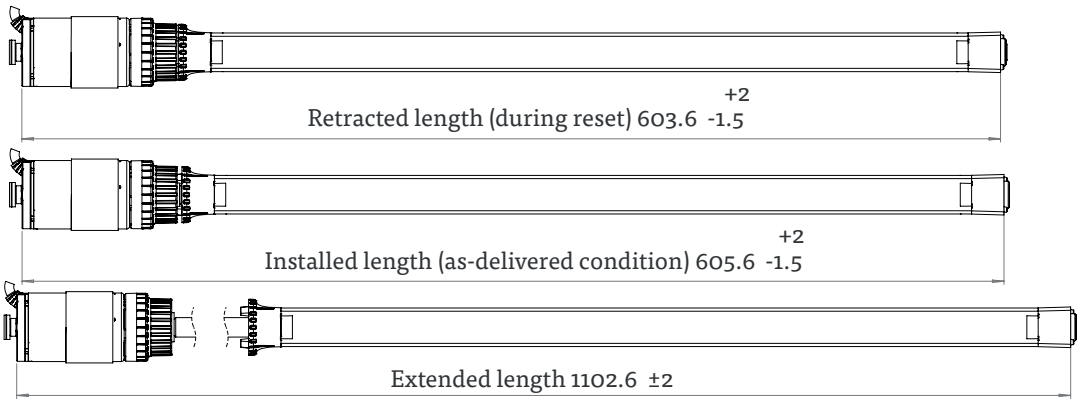

Fig. 3: Drive dimensions

6.1.2 INSTALLATION VARIANTS

There are two installation variants for the SLIMdrive-500. The installation variant you require depends on the type of height-adjustable column that the drive will be installed in. These are defined as follows:

- "Thick tube up": The tube with the largest diameter is at the top (table top).
- "Thick tube down": The tube with the largest diameter is at the bottom (floor).

The SLIMdrive-500 can be used for both variants.

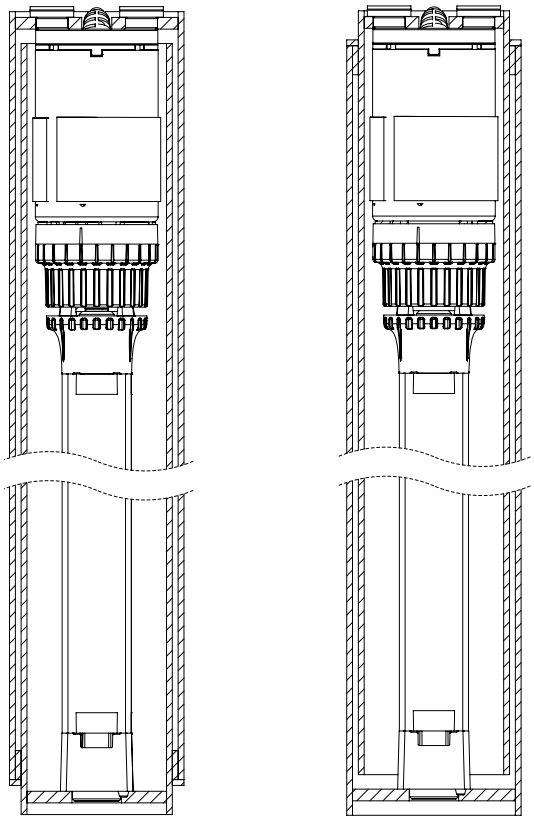

Fig. 4: "Thick tube up" and "Thick tube down" in their retracted positions

NOTE	In both installation variants, the inner diameter of the inner tube must be selected so that an all-round air gap of 3 mm between the inner wall of the tube and the SLIMdrive-500 is guaranteed.
NOTE	Height-adjustable columns must be designed so that the motor end of the SLIMdrive-500 always faces up and the steel spindle faces down.

6.1.3 INSTALLATION TOLERANCES

NOTE	In order to function properly, height-adjustable columns must comply with the tolerances specified by LOGICDATA. Failure to comply will void all warranty claims. Information on tolerances is published by LOGICDATA on request.

6.1.4 DEFAULT SETTINGS

NOTE	LOGICDATA recommends measuring the dimensions of the SLIMdrive-500 before assembly. Use a gauge or other suitable measuring equipment to do this.
NOTE	In order to utilize the complete stroke of the drive, the height-adjustable column must be of a sufficient length. The drive must reach its final position before the tube.

6.2 RECOMMENDED ASSEMBLY PROCEDURE

NOTE	The assembly procedure shown is based on a height-adjustable column design in which the top plate can be removed (i.e., it is not permanently connected to the thick tube). Contact LOGICDATA to get instructions for mounting the drive into other types of height-adjustable columns.
NOTE	Measure the friction between the tube pairs before installing the drive. The combination of the control box and drive is not a suitable means for measuring friction.

Follow these steps to mount the SLIMdrive-500 into the height-adjustable column:

1. Insert the two tubes into each other.

NOTE	Measure the gliding properties of the height-adjustable column without the drive after this step.

2. Mount the drive in the preassembled height-adjustable column (see Fig. 5: Example of actuator installation in a cylindrical height-adjustable column).
3. Attach the motor end and spindle end according to Chapter 6.2.1 and Chapter 6.2.2.

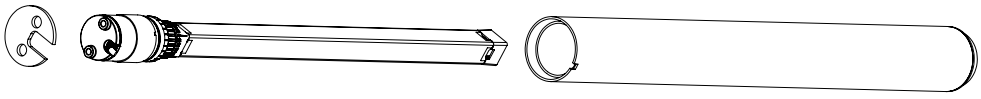

Fig. 5: Example of actuator installation in a cylindrical height-adjustable column

6.2.1 ATTACHING THE MOTOR END

The figure below depicts the components required to attach the drive at the motor end.

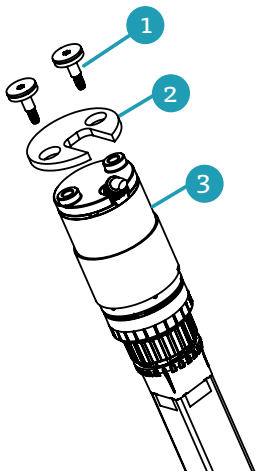

Fig. 6: Overview of the motor end

1	Mounting screws including rubber washers
2	Top plate (developed by the customer using LOGICDATA design specifications)
3	Drive

NOTE	LOGICDATA provides specifications for the top plate only on request. These include dimensions and tolerances, as well as notes on material selection and assembly.
NOTE	Do not lift the SLIMdrive-500 by the cable. Ensure that the cable is not damaged during assembly.
NOTE	The screws and rubber washers are supplied with the drive. Tighten the mounting screws to the recommended torque of 2.5 - 3 Nm.
NOTE	Only mount the SLIMdrive-500 with the supplied screws. Correct tightening cannot be guaranteed with other screws.
NOTE	Mounting without the rubber washers is not permitted.

CAUTION	**Danger due to insecure connections** To ensure a secure connection, the top plate must be designed according to LOGICDATA specifications. Failure to comply will void warranty claims.

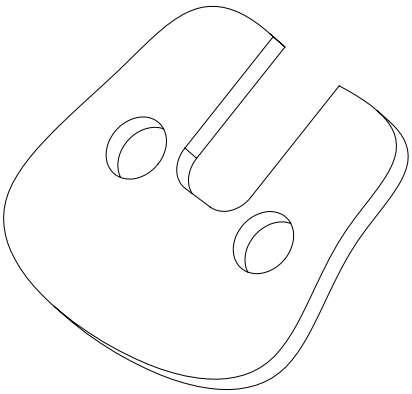

Fig. 7: Representative illustration of the top plate

6.2.2 ATTACHING AT THE SPINDLE END

The figure below depicts the components required to assemble the drive at the spindle end.

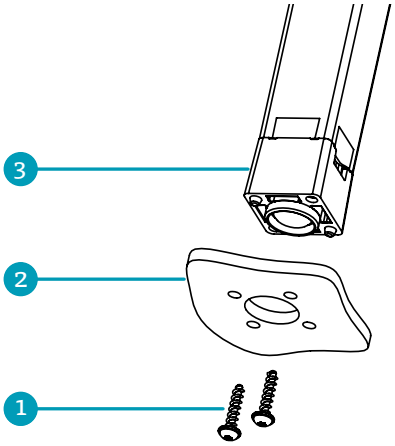

Fig. 8: Overview of the spindle end

1	Mounting screw (self-tapping screw; contact LOGICDATA for specifications)
2	Bottom plate (developed by the customer using LOGICDATA design specifications)
3	Mounting point support tube

NOTE	The design specifications for the bottom plate are available from LOGICDATA only on request. These include dimensions and tolerances, as well as notes on assembly.

⚠CAUTION	**Danger due to insecure connections** To ensure a secure connection, the bottom plate must be designed according to LOGICDATA specifications. Failure to comply will void warranty claims.

7 SOFTWARE-DEPENDENT FUNCTIONS

NOTE	A description of this product's software-dependent functions can be found in the manual of the accompanying LOGICDATA control box. Software-dependent functions include: - Manual reset - Plug detection - Drive detection

8 INTELLIGENT SYSTEM PROTECTION (ISP)

Intelligent System Protection (ISP) is LOGICDATA's collision prevention system. It significantly reduces the risk of pinching when using LOGICDATA products. If there is an obstacle in the operating range of a table, and the obstacle and table collide, a load change affects the SLIMdrive-500. When the load change is detected, all drives stop immediately and move back in the opposite direction for a few seconds.

Software ISP

Software ISP uses known system variables that are measured or calculated by each control box. Additional sensors are not necessary. This function is available with all LOGICDATA control boxes and all drives.

9 DISSAMBLY

To disassemble the SLIMdrive-500, you must first disconnect the device from the power supply. Then, follow the assembly instructions in reverse order.

10 MAINTENANCE

⚠WARNING	**Risk of harm from the use of non-original accessory parts** Only use original accessory parts. Accessories may only be installed by qualified personnel. Failure to comply will void all warranty claims.
⚠WARNING	**Risk of harm from unauthorized repairs** You may only use original spare parts when repairing the drive. Only qualified persons are authorized to perform repairs. Contact customer services immediately in the event of a malfunction. Failure to comply will void all warranty claims.

11 TROUBLESHOOTING

If you are experiencing technical problems, please contact LOGICDATA support::

Phone: +43 (0) 3462 51 98 0
Fax: +43 (0) 3462 51 98 1030
E-mail: office.at@logicdata.net

Always provide the product name and revision status (found on the type plate) when making a support request. If the system is defective, replace the SLIMdrive-500.

11.1 POSSIBLE MALFUNCTIONS AND THEIR SOLUTIONS

Problem	Possible cause	Solution
SLIMdrive-500 does not function	The control box is not connected to the mains	Plug in the control box's power supply cable
	SLIMdrive-500 linear actuator is not connected	Plug the motor cable into the control box
	Poor plug connection	Ensure that the motor cable, mains cable, and hand control are properly plugged in
	The control box is defective	Contact LOGICDATA
	The hand control is defective	Replace the hand control
	The SLIMdrive-500 linear actuator is defective	Replace the SLIMdrive-500 linear actuator
SLIMdrive-500 only moves down (retracted position)	There was power failure while the device was in motion The power cable was unplugged while the device was in motion	Manual reset *
	Reset required	Perform a reset
	The SLIMdrive-500 linear actuator is defective	Replace the SLIMdrive-500 linear actuator

* If actuators only move down

NOTE

Detailed descriptions of the error codes on hand controls can be found in the control box manual. You will also find descriptions of click codes in this document.

12 ADDITIONAL INFORMATION

12.1 TECHNICAL DATA

You can find all the relevant technical data regarding your drive in the product's data sheet.

12.2 OPTIONAL PRODUCTS

NOTE

You can find information about available optional products in our current product catalog and at www.logicdata.net

12.3 DISPOSAL

The SLIMdrive-500 is an electrical and electronic device that must be disposed of separately from household waste according to the WEEE Directive 2012/19/EU. Product of this type are marked with the symbol shown on the left.

Before disposing of any materials or components, check if they can be recycled. Recycle as many parts as possible.

Dispose of all materials and parts in accordance with your local guidelines and regulations. Ensure that the disposal is lastingly compatible for humans and nature.

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