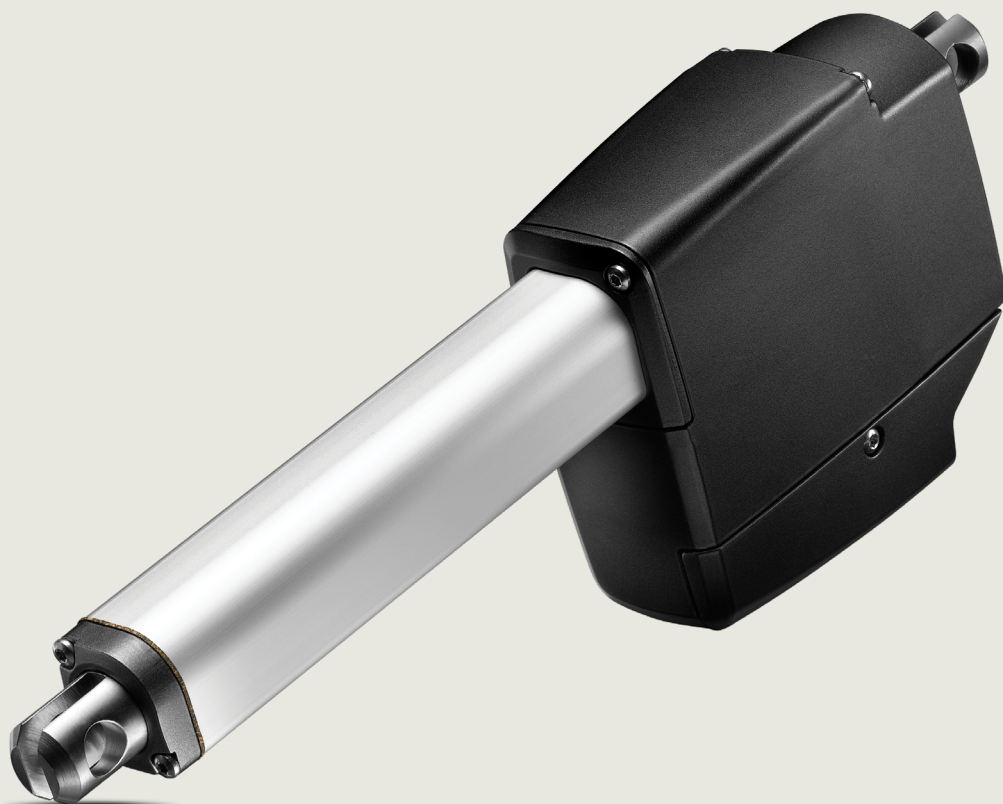


LA25 I/O™

# User Manual



## Contents

Preface .....	3
Terms of use .....	4
Safety instructions.....	5
Mounting guidelines.....	7
Mounting of cables.....	9
Electrical installation.....	10
LA25 I/O™ with Bluetooth® .....	11
FCC Statement - LA25 I/O™ with Bluetooth®.....	13
Troubleshooting.....	14
Parallel troubleshooting.....	15
Initialising the actuator.....	15
Specifications.....	16
Actuator dimensions.....	17
Speed and current curves - 12 V motor .....	18
Speed and current curves - 24 V motor .....	19
Product label for LA25 I/O™ .....	20
Key to symbols.....	21
LA25 ordering example.....	22
Maintenance.....	25
Repair.....	25
Main groups of disposal.....	25
Contacts.....	26

## Preface

Dear User,

We are delighted that you have chosen a LINAK® product.

LINAK systems are high-tech products based on many years of experience in the manufacture and development of actuators, electric control boxes, controls, batteries, accessories and chargers.

This User Manual does not address the end user. It is intended as a source of information for the equipment or system manufacturer only, and it will tell you how to install, use and maintain your LINAK electronics. The manufacturer of the end product has the responsibility to provide a User Manual, where relevant safety information from this manual is passed on to the end user.

We are convinced that your LINAK product/system will give you many years of problem-free operation.

Before our products leave the factory, they undergo both function and quality testing. Should you, nevertheless, experience problems with your product/system, you are always welcome to contact your supplier.

LINAK subsidiaries and some distributors situated all over the world have authorised service centres, which are always ready to help you. Locate your local contact information on the back page.

LINAK provides a warranty on all products. (See warranty section).

This warranty, however, is subject to correct use in accordance with the specifications, maintenance being done correctly, and any repairs being carried out at a service centre, which is authorised to repair LINAK products.

Changes in installation and use of LINAK systems can affect their operation and durability. The products may only be opened by authorised personnel.

This User Manual has been written based on the present technical knowledge. LINAK reserves the right to carry out technical modifications and keeps the associated information updated.

**LINAK A/S**

---

## Terms of use

LINAK® takes great care in providing accurate and up-to-date information on its products. However, the user is responsible for determining the suitability of LINAK products for a specific application.

Due to continual development, LINAK products are subject to frequent modifications and changes. LINAK reserves the rights to conduct modifications, updates, and changes without any prior notice. For the same reason, LINAK cannot guarantee the correctness and actual status of imprinted information on its products.

LINAK uses its best efforts to fulfil orders. However, for the reasons mentioned above, LINAK cannot guarantee availability of any particular product at any given time. LINAK reserves the right to discontinue the sale of any product displayed on its website or listed in its catalogues or in other written material created and produced by LINAK, LINAK subsidiaries, or LINAK affiliates.




All sales are subject to the 'Standard Terms of Sale and Delivery for LINAK A/S' available on LINAK websites.

LINAK and the LINAK logotype are registered trademarks of LINAK A/S. All rights reserved.

## Safety instructions

Please read this safety information carefully.

Be aware of the following three symbols throughout the user manual:

-  **Warning!**  
Failing to follow these instructions can cause accidents resulting in serious personal injury.
-  **Recommendations**  
Failing to follow these instructions can result in the actuator suffering damage or being ruined.
-  **Additional information**  
Usage tips or additional information that is important in connection with the use of the actuator.

Furthermore, ensure that all staff who are to connect, mount, or use the actuator are in possession of the necessary information and that they have access to this user manual.

Persons who do not have the necessary experience or knowledge of the product/products must not use the product/products. Besides, persons with reduced physical or mental abilities must not use the product/products, unless they are under surveillance or they have been thoroughly instructed in the use of the apparatus by a person who is responsible for the safety of these persons.

Moreover, children must be under surveillance to ensure that they do not play with the product.

### **Before you start mounting/dismounting, ensure that the following points are observed:**

- The actuator is not in operation.
- The actuator is free from loads that could be released during this work.

### **Before you put the actuator into operation, check the following:**

- The actuator is correctly mounted as indicated in the relevant user instructions.
- The equipment can be freely moved over the actuator's whole working area.
- The actuator is connected to a mains electricity supply/transformer with the correct voltage and which is dimensioned and adapted to the actuator in question.
- The voltage applied matches the voltage specified on the actuator label.
- The connection bolts can withstand the wear.
- The connection bolts are secured safely.

**During operation, please be aware of the following:**

- Listen for unusual sounds and watch out for uneven running. Stop the actuator immediately if anything unusual is observed.
- Do not sideload the actuator.
- Only use the actuator within the specified working limits.
- Do not step on or kick the actuator.

**When the equipment is not in use:**

- Switch off the mains supply in order to prevent unintentional operation.
- Check regularly for extraordinary wear.

**Classification**

The equipment is not suitable for use in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide.

**Warnings**

- Do not sideload the actuator.
- When mounting the actuator in the application, ensure that the bolts can withstand the wear and that they are secured safely.
- If irregularities are observed, the actuator must be replaced.
- For actuators with a stroke length below 50 mm, the extended position of the mechanical endstop will always be at 50 mm. For example, if an actuator has a stroke of 20 mm and the endstop switch in the outwards direction fails, the actuator will travel an additional 30 mm before reaching mechanical endstop.

**Recommendations**

- Do not place load on the actuator housing and do prevent impact or blows, or any other form of stress to the housing.
- Ensure that the cable cover is mounted correctly. Use 1.5 Nm torque.
- Ensure that the duty cycle and the usage temperatures for LA25 actuators are respected.
- Ensure that the cable cannot be squeezed, pulled or subjected to any other stress.
- Furthermore, it will be good practice to ensure that the actuator is fully retracted in the “normal” position. The reason is that there will be a vacuum inside the actuator if it is extended which over time can lead to water entering the actuator.
- If the actuator (without Integrated Controller) is mounted in an application where a mechanical stop prevents the endstop switches in the actuator from being activated, the actuator must be equipped with an electrical safety device (current monitoring) or external limit switch.

## Mounting guidelines

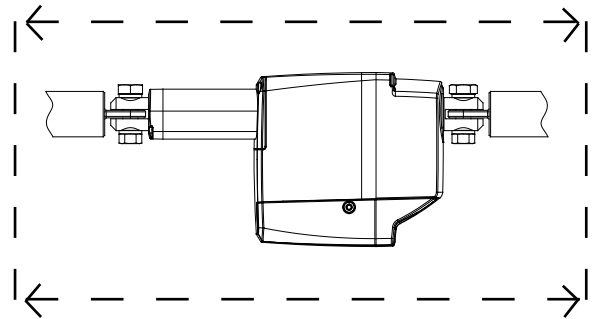
LINAK® linear actuators are quickly and easily mounted by slipping pins through the holes on each end of the units and into brackets on the machine frame and the load.

The mounting pins must be parallel to each other as shown in Figure 1. Pins, which are not parallel to each other, may cause the actuator to bend and be damaged.

The load should act along the stroke axis of the actuator as off-centre loads may cause bending and lead to premature failure. See Figure 2.

Make sure the mounting pins are supported in both ends. Failure to do so could shorten the life of the actuator. Also, avoid applying a skew load on the actuator.

Figure 1



The actuator can rotate around the pivot point in the front and rear end. If this is the case, it is of high importance that the actuator is able to move freely over the full stroke length, both during the development and daily operation. Please pay special attention to the area around the housing where parts can be trapped and cause damage to the application and actuator.

In applications with high dynamic forces, LINAK recommends not using the fully extended or retracted position over a longer period of time, as this can damage the endstop system permanently.

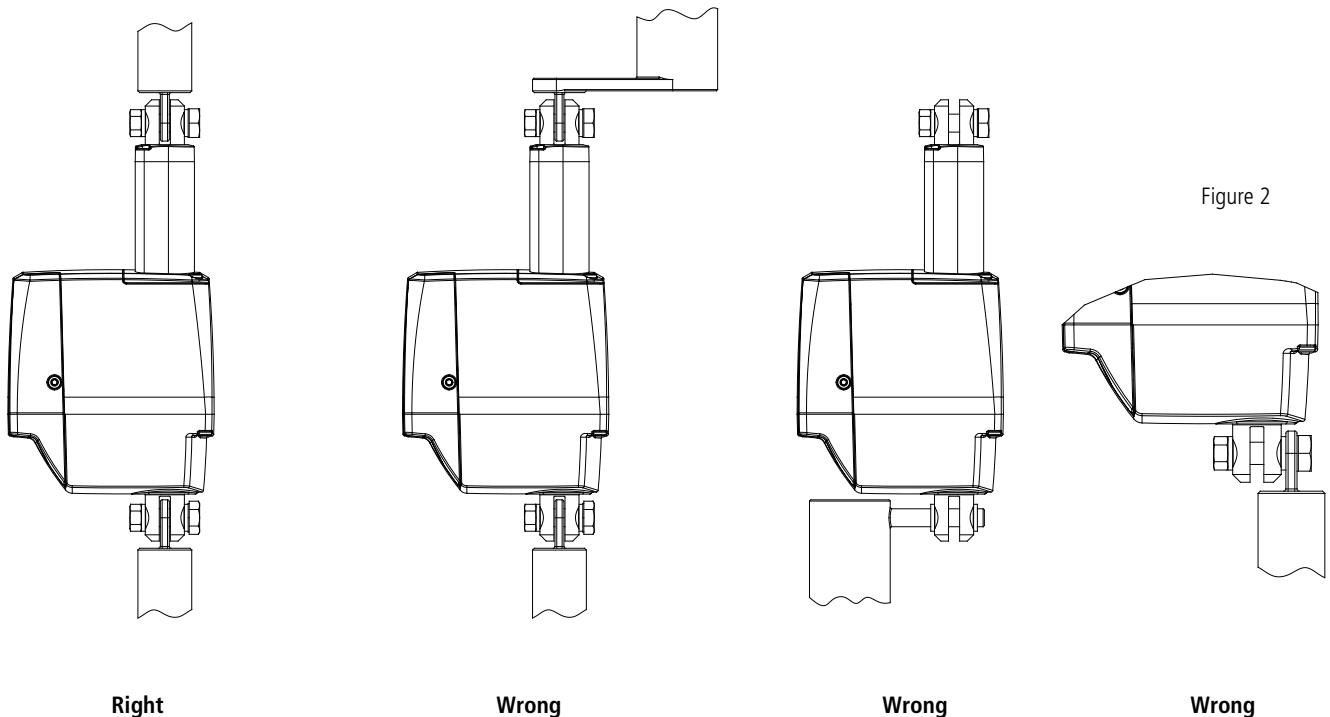


Figure 2

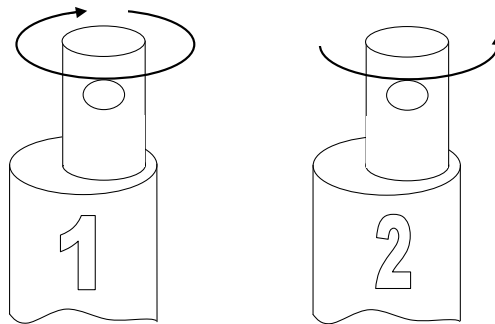
## Mounting guidelines

- The mounting pins must have the correct dimension.
- The bolts and nuts must be made of a high quality steel grade (e.g. 10.8).
- No thread on the bolt inside the back fixture or the piston rod eye.
- Bolts and nuts must be protected so there is no risk of them falling out.
- Do not use a torque that is too high when mounting the bolts for the back fixture or the piston rod eye. This will stress the fixtures.

**Please note: The piston rod eye is only allowed to turn 0-90 degrees.**

### Instruction concerning the turning of the piston rod eye and inner tube:

- When mounting and taking into use, it is not permitted to make excessive turns of the piston rod eye. In cases where the eye is not positioned correctly, it is permitted to first screw the eye down to its bottom position, at a maximum torque of 2 Nm (1), and thereafter a maximum 90 degrees turn outwards again (2)
- As the piston rod eye can turn freely, it is important to ensure that the eye cannot rotate if the actuator is used in a pull application. If this happens, the actuator will be pulled apart and destroyed



### Warning!

**If the actuator is used for pull in an application where personal injury can occur, the following is valid:**

It is the application manufacturer's responsibility to incorporate a suitable safety arrangement, which will prevent personal injury from occurring, if the actuator should fail.



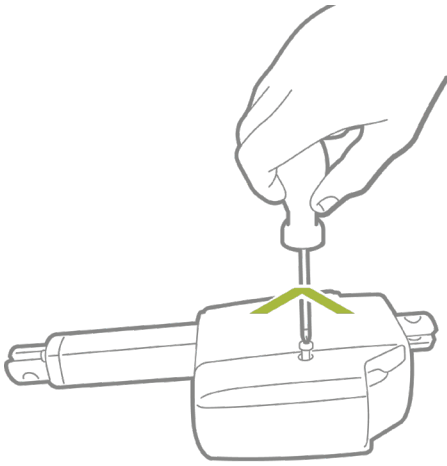
### Warning!

**LINAK® actuators are not designed for use within the following fields:**

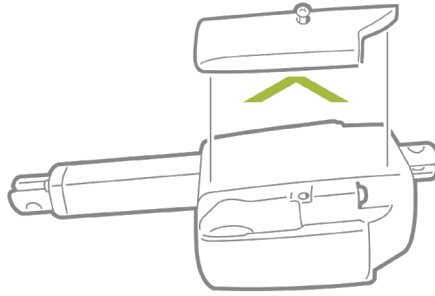
- Offshore installations
- Nuclear power generation
- Aeroplanes and other aircraft



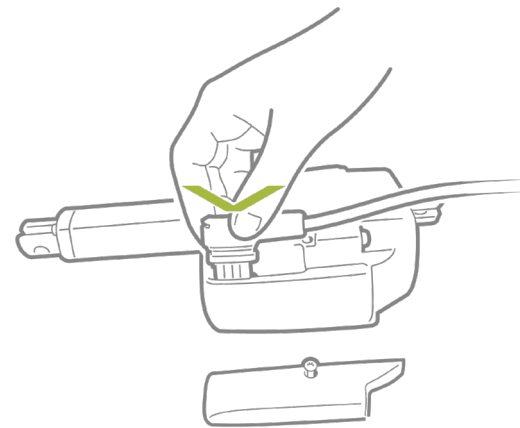
## Mounting of cables



1. Unscrew the cover

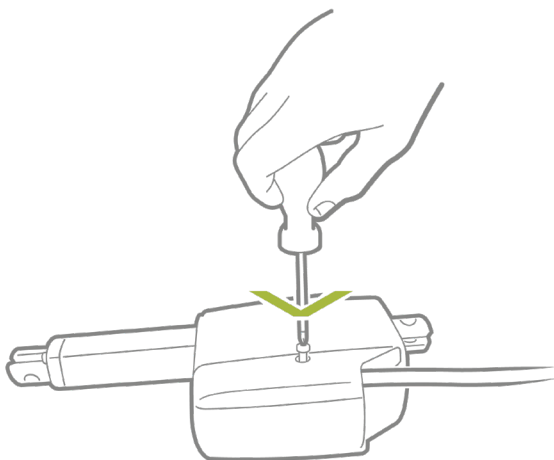


2. Remove the cover



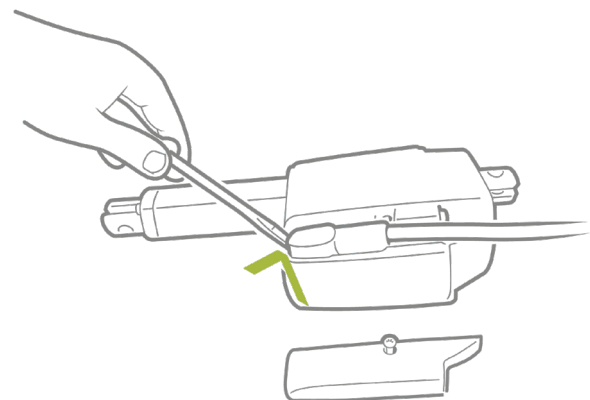
3. Plug in the cable gently without using any tools

## Removing cables



4. Screw the cover back onto the actuator

The torque of the cover screw is approx. 1.5 Nm





5. Use a screwdriver to pull up the cable



- When changing the cables on a LINAK® actuator, it is important that this is done carefully in order to protect the plugs and pins. Before the new cable is mounted, we recommend that the socket is greased with vaseline, to keep the high IP protection and ensure an easy mounting. Please be sure that the plug is in the right location and fully pressed in before the cable lid is mounted. Note that the cable should not be used for carrying the actuator.
- We recommend taking some precaution and designing the wire connection in such a way that the cable end is kept inside a closed, protected area to guarantee the high IP protection.

## Electrical installation

-  To ensure maximum self-locking ability, please be sure that the motor is shorted when stopped. Actuators with Integrated Controller provide this feature, as long as the actuator is powered.
-  When using soft stop on a DC-motor, a short peak of higher voltage will be sent back towards the power supply. It is important when selecting the power supply that it does not turn off the output, when this backwards load dump occurs.



The power supply for actuators without Integrated Controller must be monitored externally and cut off in case of current overload.

### Recommended fuse for actuators without Integrated Controller

Type	Spindle pitch (mm)	Load max. push/pull (N)	Typical amp. at full load (A)		Recommended fuse	
			24 V - 12 V		24 V - 12 V	
25030xxxxxxxxxA...	3	2500	-	3.8	-	10 A
25060xxxxxxxxxA...	6	1500	-	3.8	-	10 A
25090xxxxxxxxxA...	9	1200	-	4.0	-	10 A
25120xxxxxxxxxA...	12	900	-	3.8	-	10 A
25200xxxxxxxxxA...	20	600	-	4.0	-	10 A
25030xxxxxxxxxB...	3	2500	1.9	-	6 A	-
25060xxxxxxxxxB...	6	1500	1.9	-	6 A	-
25090xxxxxxxxxB...	9	1200	2.0	-	6 A	-
25120xxxxxxxxxB...	12	900	1.9	-	6 A	-
25200xxxxxxxxxB...	20	600	2.0	-	6 A	-

## LA25 I/O™ with Bluetooth®

LA25 I/O is an industrial linear actuator with Integrated Controller and various analogue/digital input and outputs. To support development, continuous improvements and troubleshooting, it also features a Bluetooth® service interface. This can be used to wirelessly connect the actuator to a Windows PC and make use of the LINAK tool Actuator Connect™.

Input/Output	Specification	Comments
Description	I/O is a universal industrial interface which has been developed by LINAK. I/O is a common term used in the industry, to describe inputs and outputs. Flexibility is key when describing the possibilities of an I/O actuator. A total of six wires are customizable and this opens a world of intelligent actuator control.	
Supporting PC tool for Windows	Enhance your actuator experience with Actuator Connect - Easy connection with Bluetooth® or a USB cable* - Flexibility in the development phase - Utilize data to learn about the actuator performance  * Cable must be purchased separately (item no. 0367996)	
<b>Power supply</b>		
Brown	24 or 48 V DC + (VCC) Connect brown to positive 24 V ± 10 % - default current limit 9 A 48 V ± 10 % - default current limit 4.5 A	The actuator has an integrated H-bridge, and it is therefore important not to change the power supply polarity on the brown and blue wires. Power supply GND (-) is electrically connected to the housing  If the temperature drops below 0°C, all default current limits will automatically increase to 18 A for 24 V and 9 A for 48 V
Blue	24 or 48 V DC - (GND) Connect blue to negative	
<b>Digital or analogue input</b>		
Red	<u>Features available:</u> - Standard run - outwards - Predefined positions - Servo (+) - Proportional (+)	Standard run and predefined positions:  On/off voltages: > 67 % of $V_{IN}$ = ON and < 33 % of $V_{IN}$ = OFF Input current: 10 mA
Black	<u>Features available:</u> - Standard run - inwards - Predefined positions - Servo (-) - Proportional (-)	

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG Inc. and any use of such marks and logos by LINAK® is under license.

Digital output		
Green	<u>Features available:</u> <ul style="list-style-type: none"> <li>- Endstop reached (outwards)*</li> <li>- Endstop zone reached (outwards)*</li> <li>- Target position reached</li> <li>- Single hall XOR</li> <li>- Dual hall (A)</li> <li>- Actuator running*</li> <li>- Constantly high</li> <li>- Constantly low</li> <li>- Not in use</li> </ul>	<u>Digital outputs*:</u> The digital outputs are either active high or active low, depending on the preferred signal type. <ul style="list-style-type: none"> <li>- Output voltage min. <math>V_{IN} - 2\text{ V}</math></li> <li>- Source current max. 100 mA</li> </ul>
Yellow	<u>Features available:</u> <ul style="list-style-type: none"> <li>- Endstop reached (inwards)*</li> <li>- Endstop zone reached (inwards)*</li> <li>- Target position reached</li> <li>- Single hall XOR</li> <li>- Dual hall (B)</li> <li>- Actuator running*</li> <li>- Constantly high</li> <li>- Constantly low</li> <li>- Not in use</li> </ul>	
Analogue output or digital input		
Orange	<u>Features available:</u> <ul style="list-style-type: none"> <li>- Analogue feedback (+)</li> <li>- Predefined position 1</li> <li>- Run condition</li> </ul>	
Light Blue	<u>Features available:</u> <ul style="list-style-type: none"> <li>- Analogue feedback (-)</li> <li>- Predefined position 2</li> </ul>	
Fixed wires		
Violet	Parallel communication Violet wires must be connected together	The parallel drive function will support up to 8 actuators running simultaneously. Please note: they must have the same potential and the power supply GND must be connected together (Blue wires).
White	Service interface	The White wire is reserved for a service interface (USB to PC) and has no functionality during operation.
Grey	Bluetooth® antenna	The Grey wire is used to strengthen the Bluetooth signal, allowing a stable wireless connection, and has no functionality during operation.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG Inc. and any use of such marks and logos by LINAK® is under license.

## FCC Statement - LA25 I/O™ with Bluetooth®



### Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.















L'exploitation est autorisée aux deux conditions suivantes :

- (1) L' appareil ne doit pas produire de brouillage;
- (2) L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG Inc. and any use of such marks and logos by LINAK® is under license.

## Troubleshooting

The table below provides a complete overview of the various error types and possible remedies. The LED distinguishes between internal (red) and external (yellow) errors.

LED	Error type	Remedies
	No error	When the actuator is fully operational, the LED will turn green and the signal will be constantly low. If the colour of the LED or the number of pulses changes, it might indicate a system malfunction.
	Overcurrent (external error)	The actuator has stopped due to overcurrent. Please remove possible obstacle(s) and run in the opposite direction of the blocking.
	Hardware (internal error)	The actuator has detected an internal hardware error. Try repowering the system or initialise the actuator. If the hardware failure cannot be solved, please contact your local LINAK® office for further assistance.
	Temperature (external error)	The actuator has detected high temperature and has been switched off. Please lower the ambient temperature or adjust the duty cycle within range. Also, make sure that the applied load matches the rated maximum of the actuator.
	Overvoltage (external error)	The supply voltage is too high and has caused the actuator to stop. Please check the power supply to make sure that it matches the rated voltage.
	Undervoltage (external error)	The supply voltage is too low and has caused the actuator to stop. Please check the power supply to make sure that it matches the rated voltage and typical amp consumption of the actuator. Also, ensure that cables are thick enough to avoid voltage drops.
	Analogue input out of range (external error)	The analogue input used to run the actuator (servo or proportional) is out of range. Please make sure that the chosen signal type is within range.
	Position not changing (internal error)	The internal Hall sensor has not seen a pulse for more than 1.5 seconds. This could indicate that the motor is stalling. Try repowering the system or initialising the actuator. If the error cannot be solved, please contact your local LINAK office for further assistance.
	Run signal overruled (external error)	To avoid unintended movement the actuator has ignored the run signal after repowering. Please remove the run signal and try again.
	Initialisation (internal error)	The actuator has detected an internal initialisation error. Try repowering the system or initialise the actuator once more. If the initialisation failure cannot be solved, please contact your local LINAK office for further assistance.
	Parallel start-up (external error)	Upon start-up, the parallel system has detected that the number of actuators is incorrect. Check the configuration in Actuator Connect™ (each actuator must have the same configuration) or check the wiring of the Violet and White wires used for parallel operation.
	Parallel running (internal error)	If one of the parallel actuators is disconnected without the power being turned off, the system will indicate "wrong number of actuators". Please make sure that the number of parallel actuators matches the parallel configuration.
	BLDC motor (internal error)	The actuator has detected an error on the BLDC motor controller. Try repowering the system or initialise the actuator. If the failure cannot be solved, please contact your local LINAK office for further assistance.
	Position lost (internal error)	The actuator has lost track of its position. Please run the actuator completely inwards and run outwards past the area from 35-70 mm to initialise the actuator.

## Initialising the actuator

In general, it is recommended that the actuator is initialised on a regular basis to ensure accurate positioning. This process can also be used to solve simple problems, which may result in an error message.



### How to initialise

To initialise the I/O™ actuator, please start by driving the actuator to its fully retracted position. Then run the actuator past the zero-point initialisation area (at least past 70 mm) in the outwards direction - preferably at a smooth movement with fixed speed.

## Parallel troubleshooting

The parallel system is designed to constantly monitor the status of all actuators present in the system. If the actuator has lost track of its position, the parallel system will enter Recovery mode and initialise itself – here the system runs with reduced speed (50% speed setting) while a run signal is applied (throughout a full stroke length in both directions).

If the system is unable to run in recovery mode, please continue this troubleshooting process:

1. Check cabling, power supply and communication signals between actuators.
  - See colour on LED for visual inspection of the actuator(s) to locate the one that has caused the system to stop.
2. Connect each of the actuators to the Actuator Connect™ software and look at the current status to learn why the system has stopped.
  - Try to initialise the actuator manually by using the Actuator Connect software (it is a prerequisite that the actuator is either dismantled or allowed to run without the other actuators in the parallel system).
  - If the initialisation process has fixed the internal or external error, the actuator is ready to operate in parallel again.



For further assistance, please contact your local LINAK® supplier.

## Specifications

<b>Motor</b>	Permanent magnet motor 12 or 24 V	
<b>Cable</b>	Motor: 8 x 18 AWG PVC cable	
<b>Housing</b>	The housing is made of casted aluminium, coated for outdoor use and use in harsh conditions	
<b>Spindle part</b>	Outer tube: Extruded aluminium anodised Inner tube: Stainless steel AISI304/SS2333 Acme spindle: Trapezoidal spindle with high efficiency	
<b>Temperature range</b>	- 40° C to +85° C - 40° F to +185° F	For IECEx/ATEX: - 25° C to +65° C - 13° F to +149° F
	Full performance +5° C to +40° C	
<b>End play</b>	2 mm maximum	
<b>Weather protection</b>	Rated IP66 for outdoor use. Furthermore, the actuator can be washed down with a high-pressure cleaner (IP69K)	
<b>Usage:</b>		
<b>Duty cycle</b>	Max. 20% (4 min. drive and 16 min. rest) The duty cycles are valid for operation within an ambient temperature of +5° C to +40° C	
<b>Storage temperature</b>	-55° C to + 105° C	
<b>Noise level</b>	With standard motor: Max. 58.5 dB (A) Measuring method DS/EN ISO 3743-1 (actuator not loaded)	

### Safety device regarding functional failure:

#### Safety nut

The LA25 has a built-in safety nut in push as an option.

Actuators with a safety nut in push can only function when used in push applications. The safety nut comes into operation should the main nut fail. Afterwards, it is only possible to drive the actuator into the innermost position. Then, the actuator will not function anymore and it must be sent for service. The same functionality, but in the opposite direction, goes for actuators with a safety nut in pull.

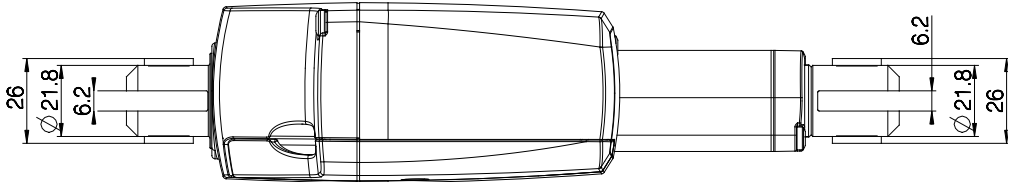
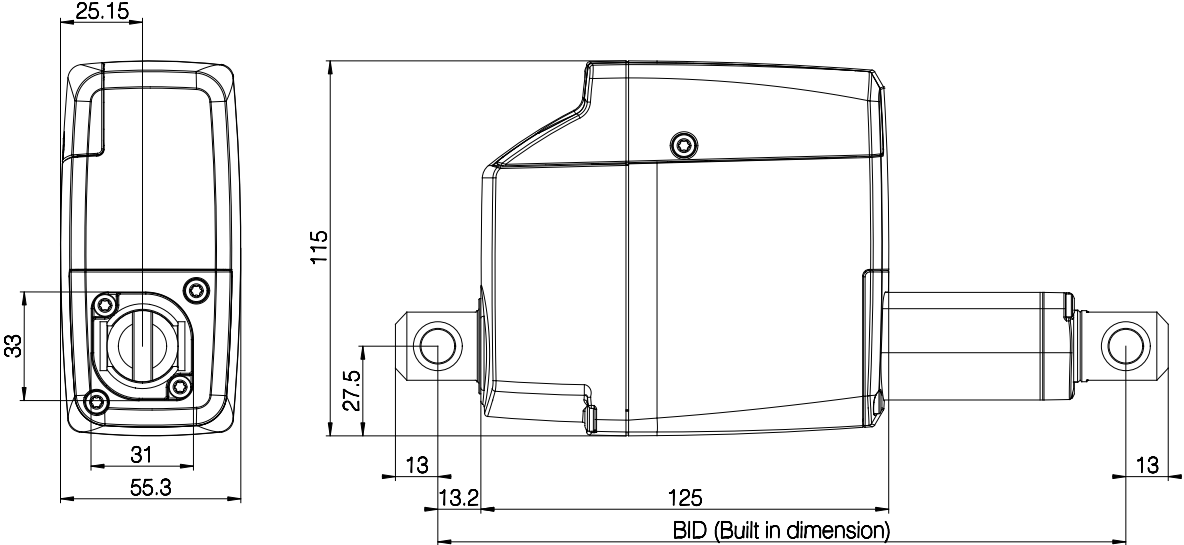
#### Mechanical endstop

LA25 is equipped with mechanical endstop.



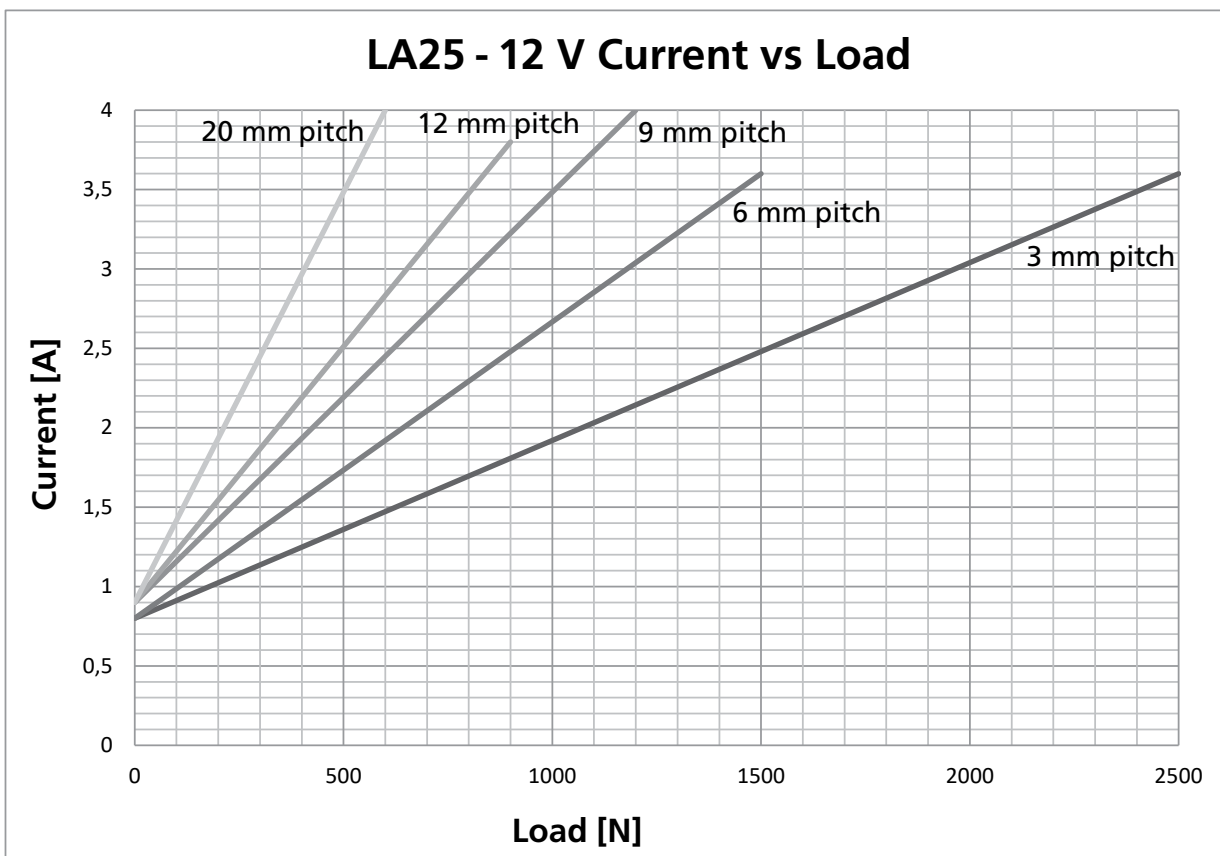
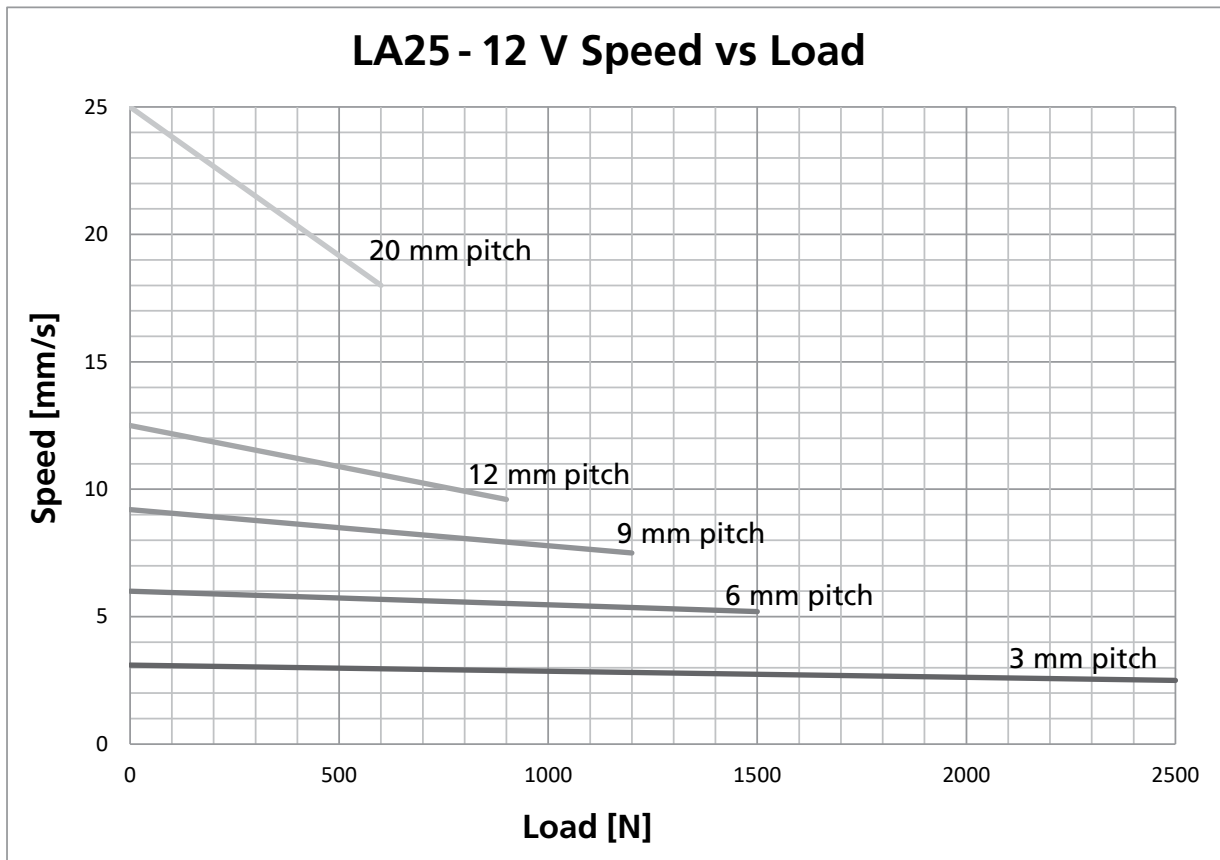
# Actuator dimensions

## TECHLINE LA25®



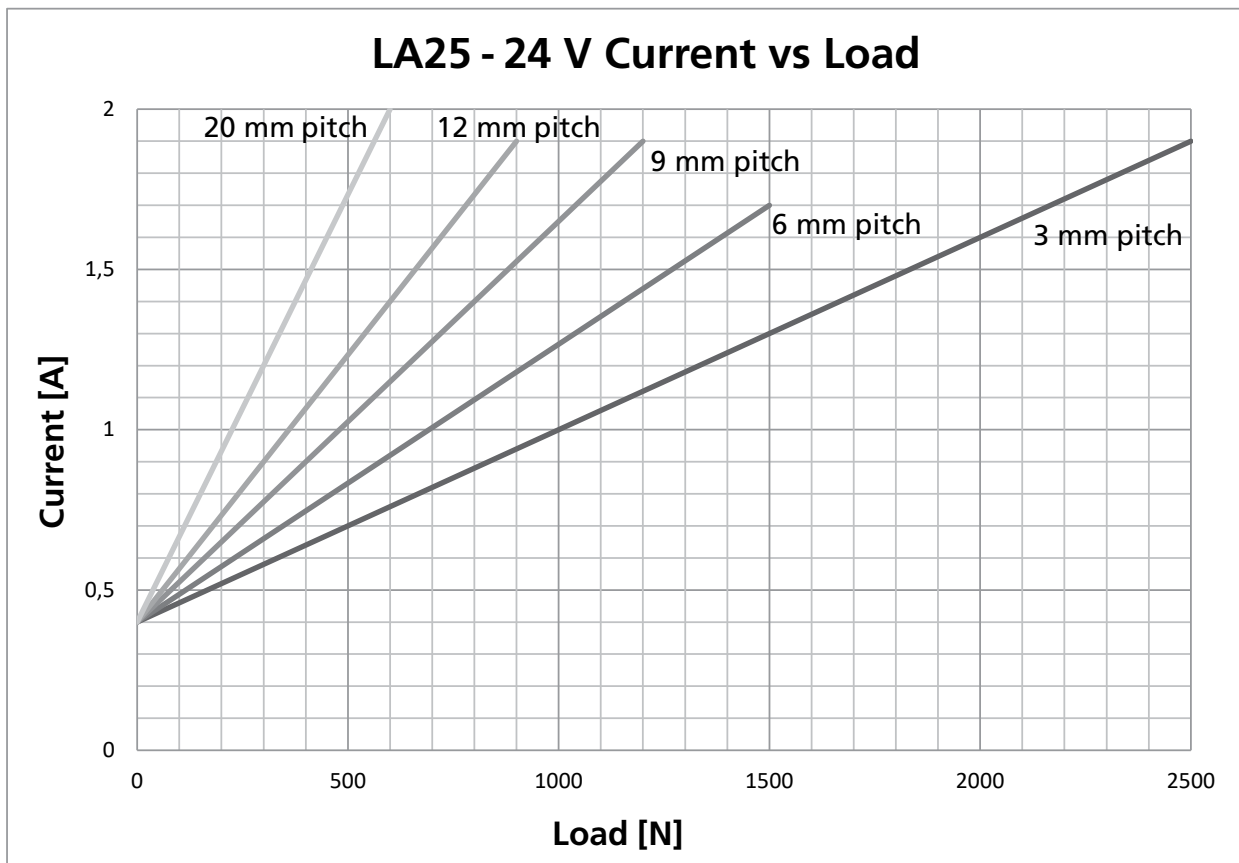
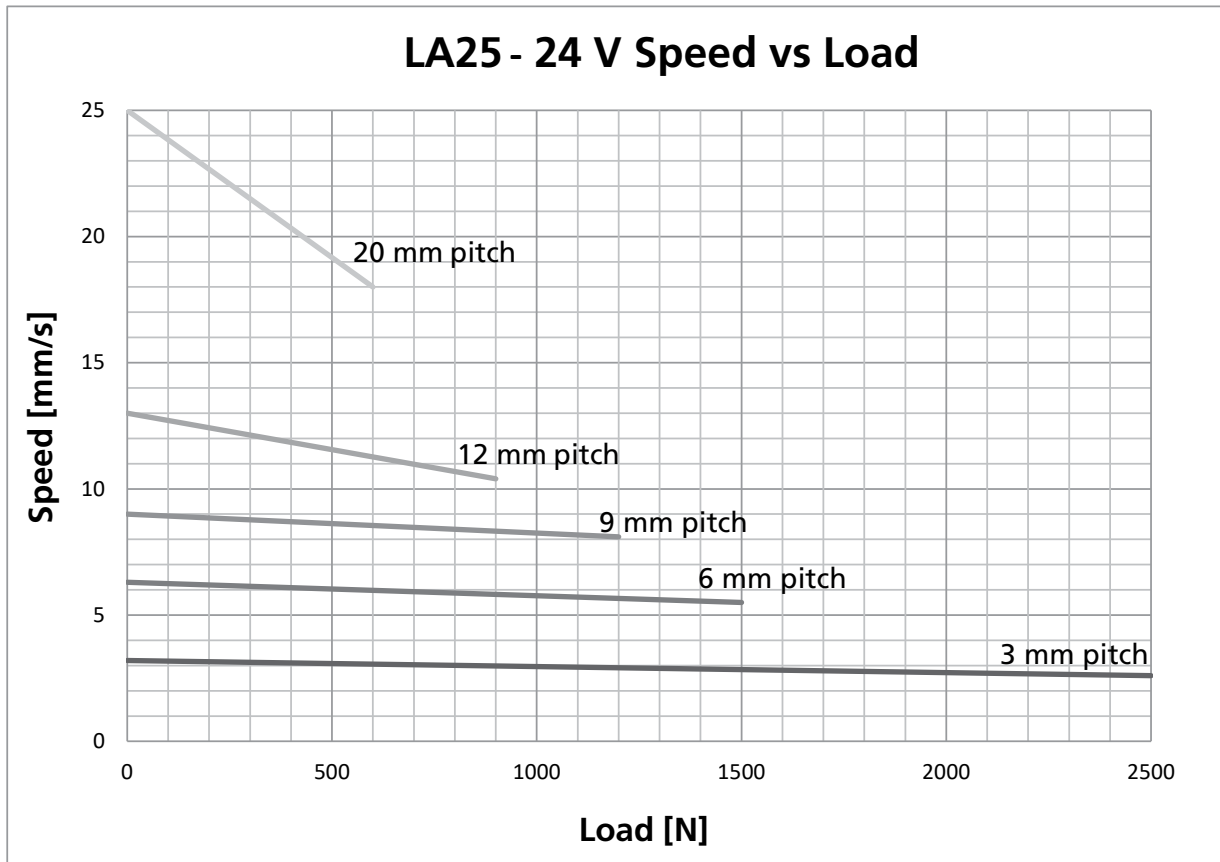
## Speed and current curves - 12 V motor

The typical values below are made with a stable power supply and an ambient temperature of 20°C.



## Speed and current curves - 24 V motor

The typical values below are made with a stable power supply and an ambient temperature of 20°C.



## Product label for LA25 I/O™

**LINAK®** 

Designed in Denmark

DK - 6430 Nordborg

Type : 250301000000FB2A=M1L00A0000216

Item No. : 25XXXX-XX / JXXXXX

Prod. Date : 2023.06.29

Max Load : Push 2500 N / Pull 2500 N IP66

Power Rate: 24 V  $\overline{\text{=}}$ , Max. 2.3 A

Duty Cycle : 20% Max. 4 min/16 min

Model : LA25IO ; FCC ID: XBE-LA25IO ; IC: 12338B-LA25IO



W/O# -0001

Made in Denmark



**1. Type: 250301000000FB2A=M1L00A0000216**

Describes the functionality of the product

**2. Item no.: 25XXXX-XX / JXXXXX**

Sale and ordering code

**3. Prod. Date: YYYY.MM.DD**

The production date describes when the product has been produced.

This date is the reference for warranty claims.

**4. Max. Load: Push 2500 N / Pull 2500 N IP66**

Describes the maximum load that the product can be exposed to in compression and tension. This line also contains a reference to the product's IP protection degree (dynamic)

**5. Power Rate: 24 V DC / Max. 2.3 A**

Input voltage for the product and maximum current consumption

**6. Duty Cycle: 20%, Max. 4 min./16 min.**

The duty cycle defines the maximum period during operation without interruption.

After operation, a pause must be observed.

It is important that the operator follows the instructions of the duty cycle; otherwise, a possible overload may result in reduced product life/errors

**7. FCC ID and IC**







A unique identifier assigned to a device registered for legal sale of wireless devices.

**8. W/O #-0001**

The LINAK® work order followed by a unique sequential identification number.

## Key to symbols

The following symbols are used on the LA25 I/O™ labels:

Symbol	Norms	Approvals
	WEEE Directive 2002/96/EC	Wheeler bin
	Compliance to all relevant EC directives	CE
	Regulatory Compliance Mark: The Australian safety/EMC regulations	RCM
	China Pollution control mark (also indicates recyclability)	China RoHS legislation
	ISO 7000- 0434A: Caution	
	Operating instructions	

## LA25 ordering example

**25 PPP XXX SS FF P M E I = B O R P C E F L P O XXX**

<b>Actuator type</b>	<b>25</b>	= LA25		
<b>Spindle pitch</b>	<b>PPP</b>			
	030	= 3 mm		
	060	= 6 mm		
	090	= 9 mm		
	120	= 12 mm		
	200	= 20 mm		
<b>Stroke length</b>	<b>XXX</b>	= mm		
<b>Safety</b>	<b>SS</b>			
	00	= None		
	0A	= Safety nut		
<b>Feedback</b>	<b>FF</b>			
	00	= None		
	0K	= Single Hall		
	0A	= Hall Potentiometer (Analogue feedback)		
	0F	= PWM		
<b>Platform</b>	<b>P</b>			
	0	= None		
	3	= IC (Not for OpenBus)		
	6	= LIN bus		
	7	= CAN bus		
<b>Motor type</b>	<b>M</b>			
	A	= 12 V DC		
	B	= 24 V DC		
<b>Endstop</b>	<b>E</b>			
	0	= Power switch (Platform: None)		
	1	= Signal switch (Platform: IC)		
<b>IP</b>	<b>I</b>			
	A	= IP66		
	T	= ATEX		
	9	= Harsh environments		
<b>Colour</b>	<b>=</b>	= Dark grey		
<b>Back fixture type</b>	<b>B</b>	<b>Zinc-coated steel</b>		<b>Stainless steel</b>
	1	= ø10.2 (0251011)	A	= ø10.2 (0251015)
	2	= ø10.2 with bushings	B	= ø10.2 with bushings
	3	= ø12.3 (0251010)	C	= ø12.3 (0251014)
	4	= ø8.2 with bushings	D	= ø8.2 with bushings
	5	= ø10.2 with nut (0251032)	F	= ø10.2 with nut (0251034)
	6	= ø10.2 with bushings + nut	G	= ø10.2 with bushings + nut
	7	= ø12.3 with nut (0251026)	H	= ø12.3 with nut (0251033)
	8	= ø8.2 with bushings + nut	I	= ø8.2 with bushings + nut
	X	= Special	M	= Male adapter M12 (0251021)
<b>Back fixture orientation</b>	<b>O</b>			
	1	= 0 degrees		
	2	= 90 degrees		

## LA25 ordering example

### 25 PPP XXX SS FF P M E I = B O R P C E F L P O XXX

<b>Piston rod eye</b>	<b>R</b>	<b>Zinc-coated steel</b>		<b>Stainless steel</b>
	1	= ø10.2 (0231033)	A	= ø10.2 (0231096)
	2	= ø10.2 with bushings	B	= ø10.2 with bushings
	3	= ø12.3 (0231016)	C	= ø12.3 (0231095)
	4	= ø8.2 with bushings	D	= ø8.2 with bushings
			K	= Ball eye ø10H7 (0351043)
			L	= Ball eye ø12H7 (0351035)
			F	= Female adapter M8 (0251039)
			M	= Male adapter M12 (231094)

<b>Plug type</b>	<b>P</b>	
	0	= None (is to be chosen if cable and connectors are not wanted)
	C	= Flying leads (is to be chosen if connector is not wanted)
	I	= Moulded Deutsch (DT4)
	J	= Deutsch (DT4)
	K	= AMP Superseal
	L	= Moulded AMP Superseal
X	= Special	

<b>Cable</b>	<b>C</b>	
	0	= None
	S	= Straight 0.75 m
	T	= Straight 1.5 m 8-core (if AMP is chosen: 6-core)
	R	= Straight 5 m 8-core (if AMP is chosen: 6-core)
	U	= Straight 0.3 m
X	= Special	

<b>EOS output</b>	<b>E</b>	
	0	= No (only IC Basic)
	1	= Yes (only IC Advanced)

<b>Feedback level</b>	<b>F</b>					
	<b>None</b>		<b>IC Basic</b>	<b>IC Advanced</b>		
	0	= None	8	= None	0	= None
	1	= 0-10 V			A	= 0-10 V
	2	= 0.5-4.5 V			B	= 0.5-4.5 V
	3	= 4-20 mA			C	= 4-20 mA
	4	= 10-90%			D	= 10-90%
	5	= 20-80%			E	= 20-80%
	9	= Special			X	= Special

<b>LIN bus</b>	
0	= LIN address 0
1	= LIN address 1
E	= LIN address E
F	= LIN address F
X	= Special

## LA25 ordering example

**25 PPP XXX SS FF P M E I = B O R P C E F L P 0 XXX**

<b>Load type</b>	<b>L</b>	
	0	= Push/Pull
	1	= Push
	2	= Pull
<b>Parallel mode</b>	<b>P</b>	
	0	= Non-critical Parallel
	2-8	= Critical Parallel (count of actuators)
<b>Not specified</b>	<b>0</b>	
<b>BID</b>	<b>XXX</b>	= BID (mm)



## Maintenance

- The actuator must be cleaned at regular intervals to remove dust and dirt, and it must be inspected for mechanical damages or wear.
- Inspect attachment points, wires, piston rod, cabinet and plug to make sure that the actuator functions correctly.
- To ensure that the pre-greased inner tube remains lubricated, the actuator must only be washed down when the piston rod is fully retracted.
- The actuator is a closed unit and therefore requires no internal maintenance.
- In order to maintain a proper performance of the spherical eyes and to increase the resistance against environmental wear, we strongly recommend that the spherical eyes (ball bearings) mounted on actuators from LINAK® are greased with anticorrosive grease or similar.

## Repair

Only an authorised LINAK service centre should repair LINAK actuator systems. Systems to be repaired under warranty must be sent to an authorised LINAK service centre.

In order to avoid the risk of malfunction, all actuator repairs must only be carried out by an authorised LINAK Service shop or repairer, as special tools and parts must be used. If a system is opened by unauthorised personel, there is a risk that it may malfunction at a later date.

## Main groups of disposal

LINAK products may be disposed of, possibly by dividing them into different waste groups for recycling or combustion.

We recommend that our product is disassembled as much as possible at the disposal and that you try to recycle it.

Product	Metal scrap	Cable scrap	Electronic scrap	Plastic recycling or combustion
LA25	X	X	X	X

## Warranty

There is an 18 months' warranty on TECHLINE® products against manufacturing faults calculated from the production date of the individual products (see label). The LINAK warranty is only valid in so far as the equipment has been used and maintained correctly and has not been tampered with. Furthermore, the actuator must not be exposed to violent treatment. In the event of this, the warranty will be ineffective/invalid. For further details, please see standard terms of sale and delivery for LINAK A/S.

### Note:

Only an authorised LINAK® service centre should repair LINAK actuator systems. Systems to be repaired under warranty must be sent to an authorised LINAK service centre. In order to avoid the risk of malfunction, all actuator repairs must only be carried out by an authorised LINAK service shop or repairer, as special tools and parts must be used.

If a system is opened by unauthorised personel, there is a risk that it may malfunction at a later date. The actuator is not to be opened by unauthorised personnel. In case the actuator is opened, the warranty will be invalid.

# Contacts

## FACTORIES

Denmark - Headquarters  
 LINAK A/S  
 Phone: +45 73 15 15 15  
 Fax: +45 74 45 80 48  
 Fax (Sales): +45 73 15 16 13  
 Web: www.linak.com

China  
 LINAK (Shenzhen) Actuator Systems, Ltd.  
 Phone: +86 755 8610 6656  
 Phone: +86 755 8610 6990  
 Web: www.linak.cn

Slovakia  
 LINAK Slovakia s.r.o.  
 Phone: +421 51 7563 444  
 Web: www.linak.sk

Thailand  
 LINAK APAC Ltd.  
 Phone: +66 33 265 400  
 Web: www.linak.com

USA  
 LINAK U.S. Inc.  
 Americas Headquarters  
 Phone: +1 502 253 5595  
 Fax: +1 502 253 5596  
 Web: www.linak-us.com  
 www.linak-latinamerica.com

## SUBSIDIARIES

Australia  
 LINAK Australia Pty. Ltd  
 Phone: +61 3 8796 9777  
 Fax: +61 3 8796 9778  
 E-mail: sales@linak.com.au  
 Web: www.linak.com.au

Austria  
 LINAK Zweigniederlassung - Österreich (Wien)  
 Phone: +43 (1) 890 7446  
 Fax: +43 (1) 890 744615  
 E-mail: info@linak.de  
 Web: www.linak.at - www.linak.hu

Belgium  
 LINAK Actuator-Systems NV/SA  
 (Belgium & Luxembourg)  
 Phone: +32 (0)9 230 01 09  
 E-mail: beinfo@linak.be  
 Web: www.linak.be - www.fr.linak.be

Brazil  
 LINAK Do Brasil Comércio De Atuadores Ltda.  
 Phone: +55 (11) 2832 7070  
 Fax: +55 (11) 2832 7060  
 E-mail: info@linak.com.br  
 Web: www.linak.com.br

Canada  
 LINAK Canada Inc.  
 Phone: +1 502 253 5595  
 Fax: +1 416 255 7720  
 E-mail: info@linak.ca  
 Web: www.linak-us.com

Czech Republic  
 LINAK C&S s.r.o.  
 Phone: +42 058 174 1814  
 Fax: +42 058 170 2452  
 E-mail: info@linak.cz  
 Web: www.linak.cz - www.linak.sk

Denmark - International  
 LINAK International  
 Phone: +45 73 15 15 15  
 E-mail: info@linak.com  
 Web: www.linak.com

Denmark - Sales  
 LINAK Danmark A/S  
 Phone: +45 86 80 36 11  
 Fax: +45 86 82 90 51  
 E-mail: linak@linak-silkeborg.dk  
 Web: www.linak.dk

Finland  
 LINAK OY  
 Phone: +358 10 841 8700  
 E-mail: linak@linak.fi  
 Web: www.linak.fi

France  
 LINAK France E.U.R.L.  
 Phone: +33 (0) 2 41 36 34 34  
 Fax: +33 (0) 2 41 36 35 00  
 E-mail: linak@linak.fr  
 Web: www.linak.fr

Germany  
 LINAK GmbH  
 Phone: +49 6043 9655 0  
 Fax: +49 6043 9655 60  
 E-mail: info@linak.de  
 Web: www.linak.de

India  
 LINAK A/S India Liaison Office  
 Phone: +91 120 4531797  
 Fax: +91 120 4786428  
 E-mail: info@linak.in  
 Web: www.linak.in

Ireland  
 LINAK UK Limited (Ireland)  
 Phone: +44 (0)121 544 2211  
 Fax: +44 (0)121 544 2552  
 +44 (0)796 855 1606 (UK Mobile)  
 +35 387 634 6554 (Rep.of Ireland Mobile)  
 E-mail: sales@linak.co.uk  
 Web: www.linak.co.uk

Italy  
 LINAK ITALIA S.r.l.  
 Phone: +39 02 48 46 33 66  
 Fax: +39 02 48 46 82 52  
 E-mail: info@linak.it  
 Web: www.linak.it

Japan  
 LINAK K.K.  
 Phone: 81-45-533-0802  
 Fax: 81-45-533-0803  
 E-mail: linak@linak.jp  
 Web: www.linak.jp

Malaysia  
 LINAK Actuators Sdn. Bhd.  
 Phone: +60 4 210 6500  
 Fax: +60 4 226 8901  
 E-mail: info@linak-asia.com  
 Web: www.linak.my

Netherlands  
 LINAK Actuator-Systems B.V.  
 Phone: +31 76 5 42 44 40 /  
 +31 76 200 11 10  
 E-mail: info@linak.nl  
 Web: www.linak.nl

New Zealand  
 LINAK New Zealand Ltd  
 Phone: +64 9580 2071  
 Fax: +64 9580 2072  
 E-mail: nzsales@linak.com.au  
 Web: www.linak.com.au

Norway  
 LINAK Norge AS  
 Phone: +47 32 82 90 90  
 E-mail: info@linak.no  
 Web: www.linak.no

Poland  
 LINAK Polska  
 LINAK Danmark A/S (Spółka Akcyjna)  
 Phone: +48 22 295 09 70 /  
 +48 22 295 09 71  
 E-mail: info@linak.pl  
 Web: www.linak.pl

Republic of Korea  
 LINAK Korea Ltd.  
 Phone: +82 2 6231 1515  
 Fax: +82 2 6231 1516  
 E-mail: info@linak.kr  
 Web: www.linak.kr

Slovakia  
 LINAK Slovakia S.R.O.  
 Phone: +421 51 7563 444  
 Web: www.linak.sk

Spain  
 LINAK Actuadores, S.L.u  
 Phone: +34 93 588 27 77  
 Fax: +34 93 588 27 85  
 E-mail: esma@linak.es  
 Web: www.linak.es

Sweden  
 LINAK Scandinavia AB  
 Phone: +46 8 732 20 00  
 Fax: +46 8 732 20 50  
 E-mail: info@linak.se  
 Web: www.linak.se

Switzerland  
 LINAK AG  
 Phone: +41 43 388 31 88  
 Fax: +41 43 388 31 87  
 E-mail: info@linak.ch  
 Web: www.linak.ch - www.fr.linak.ch  
 www.it.linak.ch

Taiwan  
 LINAK (Shenzhen) Actuator systems Ltd.  
 Taiwan Representative office  
 Phone: +886 2 272 90068  
 Fax: +886 2 272 90096  
 E-mail: sales@linak.com.tw  
 Web: www.linak.com.tw

Turkey  
 LINAK İth. İhr. San. ve Tic. A.Ş.  
 Phone: +90 312 4726338  
 Fax: +90 312 4726635  
 E-mail: info@linak.com.tr  
 Web: www.linak.com.tr

United Kingdom  
 LINAK UK Limited  
 Phone: +44 (0)121 544 2211  
 Fax: +44 (0)121 544 2552  
 E-mail: sales@linak.co.uk  
 Web: www.linak.co.uk

## DISTRIBUTORS

Argentina  
 Novotec Argentina SRL  
 Phone: 011-4303-8989 / 8900  
 Fax: 011-4032-0184  
 E-mail: info@novotecargentina.com  
 Web: www.novotecargentina.com

Colombia  
 MEM Ltda  
 Phone: +[57] (1) 334-7666  
 Fax: +[57] (1) 282-1684  
 E-mail: servicioalcliente@memltda.com.co  
 Web: www.mem.net.co

India  
 Mechatronics Control Equipments India Pvt Ltd  
 Phone: +91-44-28558484, 85  
 E-mail: bala@mechatronicscontrol.com  
 Web: www.mechatronicscontrol.com

Indonesia  
 PT. Himalaya Everest Jaya  
 Phone: +6 221 544 8956 /+6 221 544 8965  
 Fax: +6 221 619 1925  
 Fax (Sales): +6 221 619 4658  
 E-mail: hejplastic-div@centrin.net.id  
 Web: www.hej.co.id

Israel  
 NetivTech LTD  
 Phone: +972 55-2266-535  
 Fax: +972 2-9900-560  
 Email: info@NetivTech.com  
 Web: www.netivtech.com

Singapore  
 Servo Dynamics Pte Ltd  
 Phone: +65 6844 0288  
 Fax: +65 6844 0070  
 E-mail: servodynamics@servo.com.sg

South Africa  
 Industrial Specialised Applications CC  
 Phone: +27 011 466 0346  
 E-mail: gartht@isagroup.co.za  
 Web: www.isaza.co.za

United Arab Emirates  
 Mechatronics  
 Phone: +971 4 267 4311  
 Fax: +971 4 267 4312  
 E-mail: mechtron@emirates.net.ae

## Terms of use

LINAK® takes great care in providing accurate and up-to-date information on its products. However, the user is responsible for determining the suitability of LINAK products for a specific application. Due to continual development, LINAK products are subject to frequent modifications and changes. LINAK reserves the rights to conduct modifications, updates, and changes without any prior notice. For the same reason, LINAK cannot guarantee the correctness and actual status of imprinted information on its products.

LINAK uses its best efforts to fulfil orders. However, for the reasons mentioned above, LINAK cannot guarantee availability of any particular product at any given time. LINAK reserves the right to discontinue the sale of any product displayed on its website or listed in its catalogues or in other written material created and produced by LINAK, LINAK subsidiaries, or LINAK affiliates. All sales are subject to the 'Standard Terms of Sale and Delivery for LINAK A/S' available on LINAK websites. LINAK and the LINAK logotype are registered trademarks of LINAK A/S. All rights reserved.



WE IMPROVE YOUR LIFE