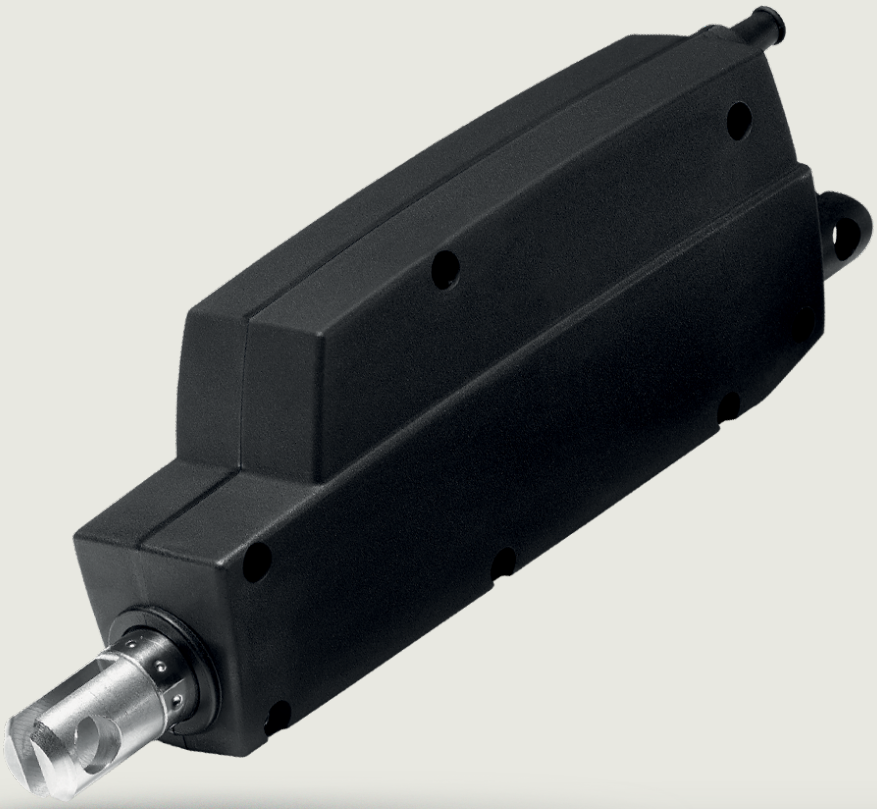
TECHLINE®
IMPROVING FLEXIBILITY

Linear Actuator LA12

User Manual



LINAK.COM/TECHLINE

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WE IMPROVE YOUR LIFE

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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, lifting columns, desk frames, 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 to provide accurate and up-to-date information about its products. However, it is the responsibility of the user to determine the suitability of LINAK products for any specific application.

Due to ongoing product development, LINAK products are subject to continuous modifications and changes. LINAK reserves the right to make such modifications, updates, and changes without prior notice. For this reason, LINAK cannot guarantee the accuracy or current status of printed information about its products.

LINAK makes every effort to fulfil orders. However, due to the factors described above, LINAK cannot guarantee the availability of any particular product at any given time. LINAK also reserves the right to discontinue the sale of any product displayed on its website, in catalogues, or in other written materials issued by LINAK or its affiliated companies.

All sales are subject to the applicable terms and conditions of sale and delivery available on LINAK websites.

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Introduction

Ideal electric actuator for applications with short linear movements. A practical, cost-effective alternative to small-scale hydraulic and pneumatic systems.

Safety instructions

Please read this safety information carefully.

Be aware of the following three symbols throughout the document:



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 document.

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 which is dimensioned and adapted to the actuator in question.
- Ensure that the voltage applied matches the voltage specified on the actuator label.
- Ensure that the connection bolts can withstand the wear.
- Ensure that 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.



Recommendations

- Do not place load on the actuator housing.
- Prevent impact or blows, or any other form of stress to the housing.
- Ensure that the duty cycle and the usage temperatures for LA12 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.

Features

- Colour: Black
- High-strength plastic housing
- Static safety factor: 2.0
- Noise level max. 60 dB(A). Measuring method: DS/EN ISO 3743-1 (actuator not loaded)
- Weight: 0.75 kg
  (Cable not included; weight varies by selected options)

Options in general

- Protection class: IPX1 or IP66
- 12 / 24 V DC permanent magnetic motor
- Max. load 750 N
- Max. speed up to 40 mm/sec. depending on load and spindle pitch
- Stroke length from 19 to 130 mm
- Back fixture in high-strength plastic, aluminium or stainless steel available in 2 different positions: 0° or 90° (factory mounted)
- Inner tube with integrated rod eye in high-strength plastic
- Straight cables with various plug types
- Stainless steel inner tube and piston rod eye
- Built-in endstop switches
- Endstop reached signals
- IC options including:
  - IC - Integrated Controller
  - Hall sensor
  - Analogue or digital feedback for precise positioning
  - Mechanical potentiometer (max. 100 mm stroke length)
  - Ready signal for diagnostics

Usage

- Duty cycle at 750 N and 2 mm pitch is max. 10%
  Duty cycle at 300 N and 4 mm pitch is max. 40%
  Duty cycle at 200 N and 6 mm pitch is max. 60%
  The duty cycles are valid for operation within an ambient temperature of +5°C to +40°C

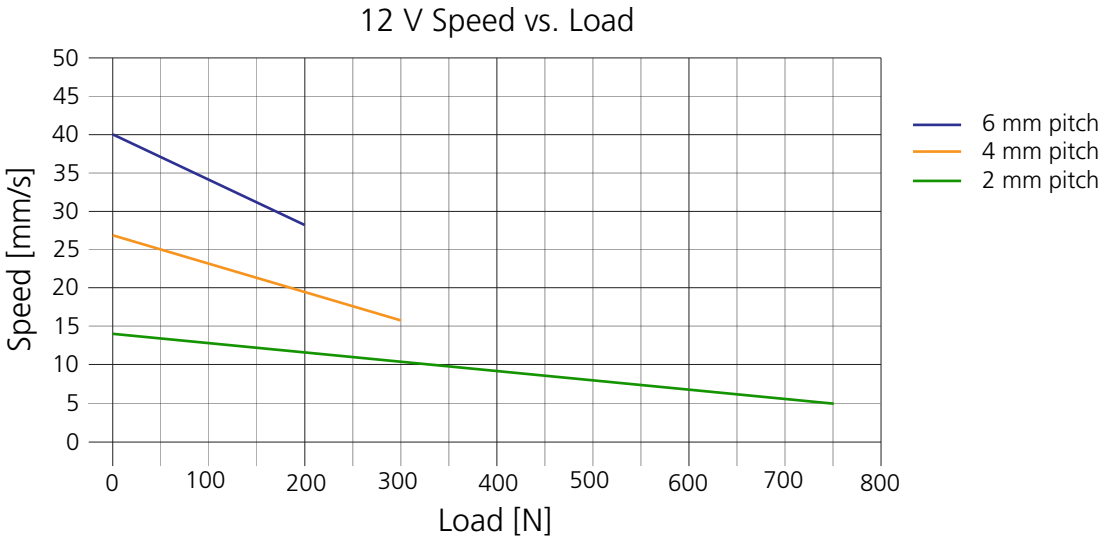


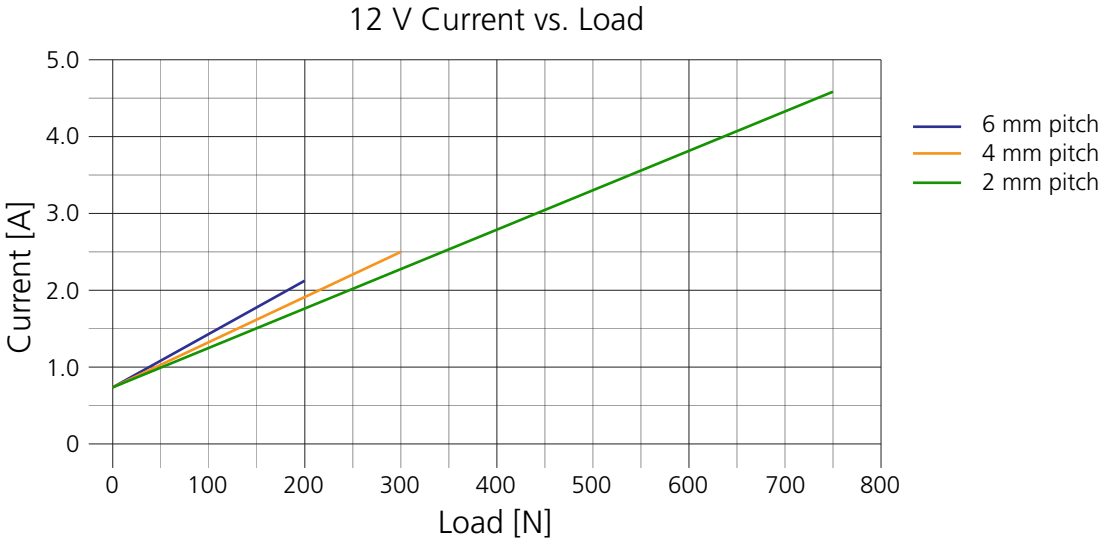
Please note: For actuators with short stroke length, low load, and infrequent operation where running time is critical, variations in running time may occur over time.
To ensure the optimal solution for your application, contact LINAK A/S.

- Ambient operating temperature: -20°C to +60°C, full performance from +5°C to +40°C
- Storage temperature: -40°C to +105°C

Speed and current curves

The typical values below are made with a nominal power supply of 12 V DC and an ambient temperature of 20°C.

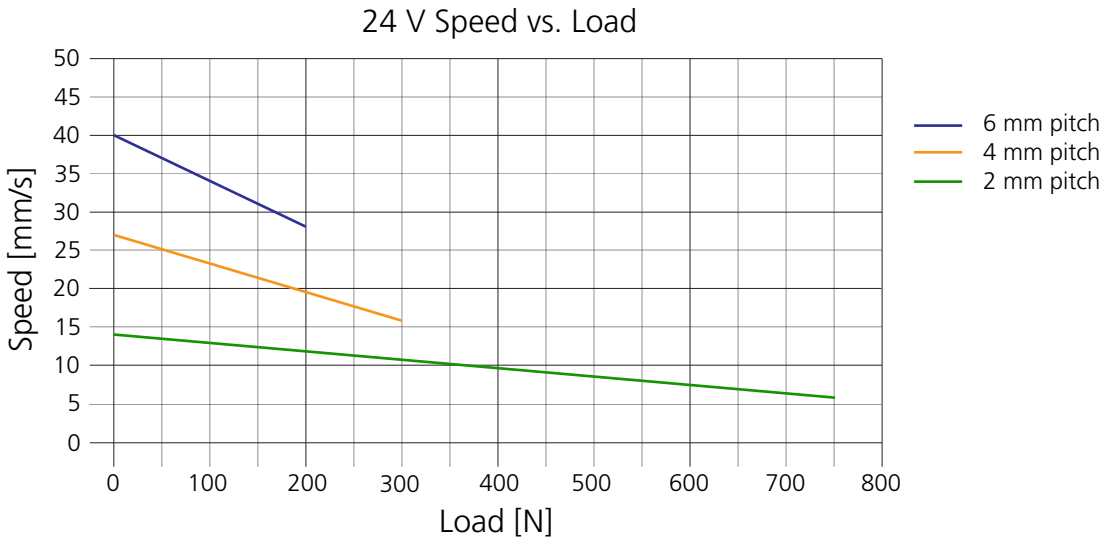


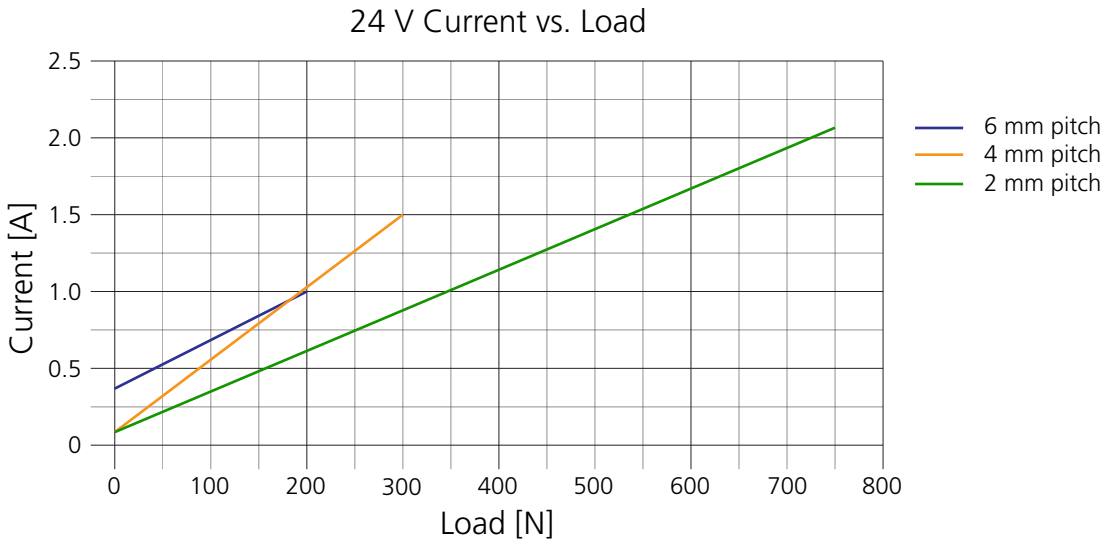


An actuator may be preconfigured from the factory with lower speed values at 0 load than those specified above; however, these values cannot be modified after configuration.

Speed and current curves

The typical values below are made with a nominal power supply of 24 V DC and an ambient temperature of 20°C.





An actuator may be preconfigured from the factory with lower speed values at 0 load than those specified above; however, these values cannot be modified after configuration.

Graphs for duty cycle

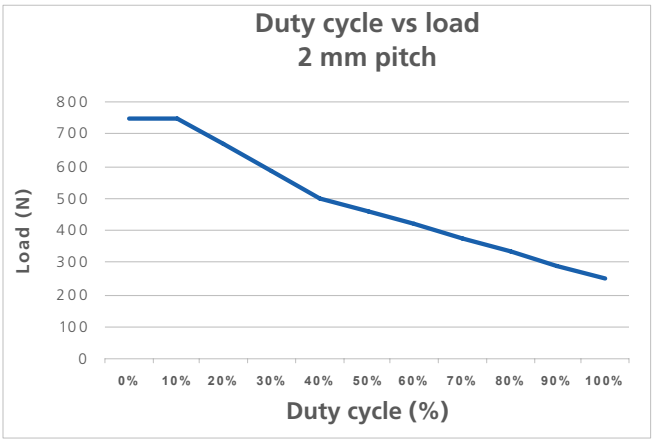
The graphs on the next page show which duty cycle can be expected compared to the load. The measurements for the graphs have been made with an ambient temperature of 20°C. If the actuator is used in a higher ambient temperature, the duty cycle will decrease.

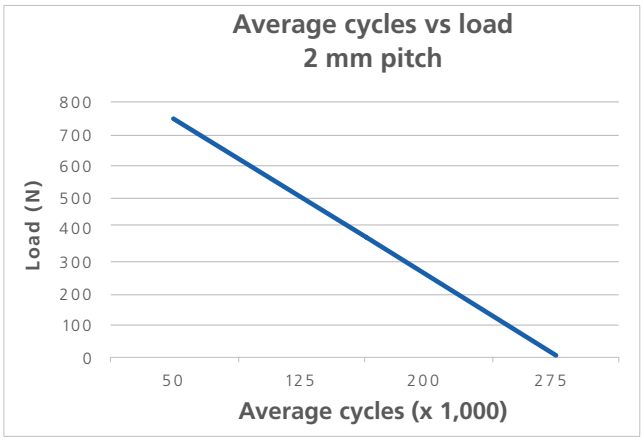
Test conditions for duty cycle and average lifetime

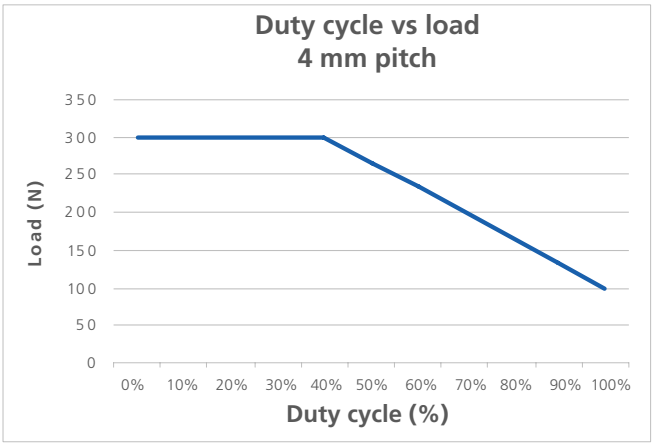
The conditions of the tests carried out at LINAK A/S are as follows:

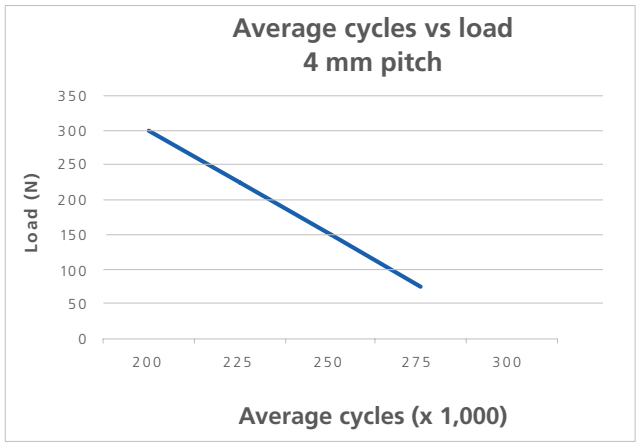
- Actuator running at full stroke (between both endstop switches)
- Actuator running at max. recommended duty cycle
- Continuous operation 24 hours a day
- No vibrations
- Relatively clean environment (no extreme dust or dirt)

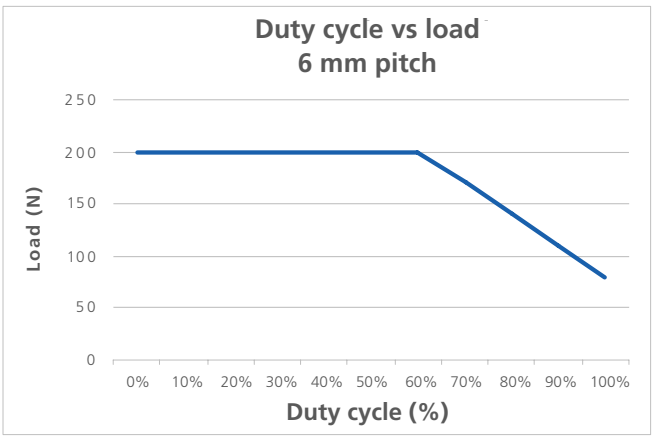
Duty cycle - 24 V

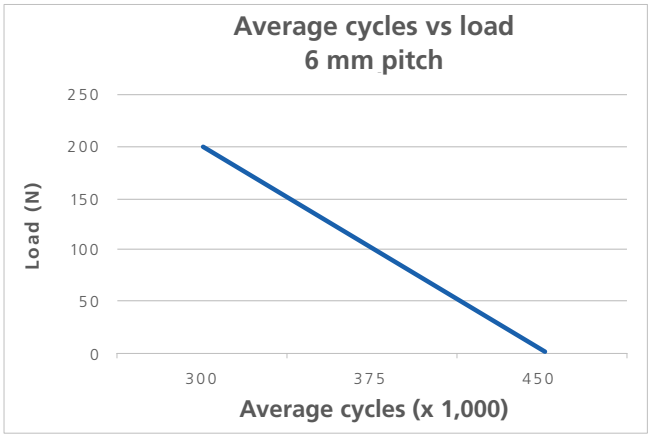












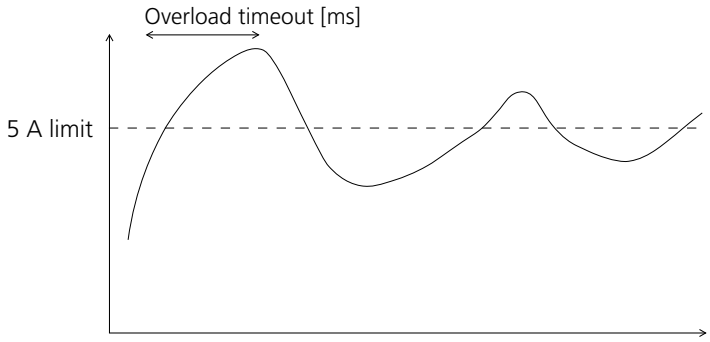
Current cut-offs

The current cut-off principle operates using an accumulating counter that tracks current levels. It counts upwards when the current exceeds a specified limit and counts downwards when it falls below that limit.

For instance, if the current limit time-out is set to 100 ms, the actuator's current must exceed the maximum threshold (5 amps in this example) for more than 100 ms before the cut-off is triggered.

Additionally, if the motor is activated in one direction, it must be blocked from activating in the same direction again until a reset is performed by activating in the opposite direction.

It is important to note that current cut-offs should not be relied upon as a general stop function, as this could lead to long-term damage to the actuator. They should only be employed in emergency situations. Furthermore, current cut-off limits do not correlate directly with the actuator's current load curves, meaning that they should not be used as indicators of load. Various tolerances in components such as the spindle, nut, and gears can also affect the current consumption of the actuator.



IC option		12 V	24 V	Reference temperature: 0°C
D F K S T	None Analogue feedback 0-10 V Analogue feedback 0.5 - 4.5 V Single Hall feedback Potentiometer 0-10 V	6 A	3 A	Above
		8 A	4 A	Below

Stroke and built-in tolerances

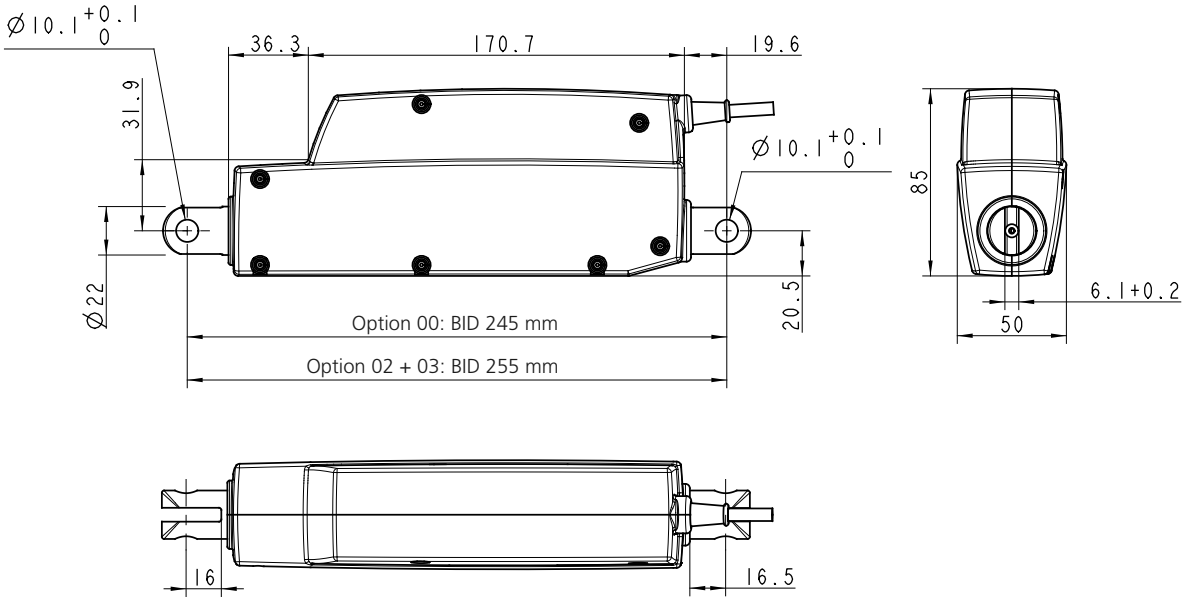
Platform options	Descriptions	Stroke tolerance	Example for 100 mm stroke	BID tolerance	BID examples
12XX00-XXXXXXXX	Standard feedback	+2/-2 mm	98 to 102 mm	+2/-2 mm	243 to 247 mm
12XX02-XXXXXXXX 12XX03-XXXXXXXX	Standard feedback	+2/-2 mm	98 to 102 mm	+2/-2 mm	253 to 257 mm
12XX00-XXXXXXXX	IC feedback	+1/-3 mm	98 to 102 mm	+2/-2 mm	243 to 247 mm
12XX02-XXXXXXXX 12XX03-XXXXXXXX	IC feedback	+1/-3 mm	98 to 102 mm	+2/-2 mm	253 to 257 mm

The values shown represent the maximum current cut-off threshold for the 12 V and 24 V versions.

An actuator may be preconfigured from the factory with lower cut-off values than those specified above; however, these values cannot be modified after configuration.

Built-in dimensions

All dimensions are in mm.



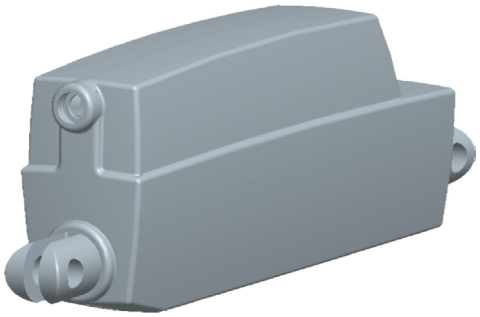
Shown with piston rod eye option “00” and back fixture option “1”

Built-in dimensions

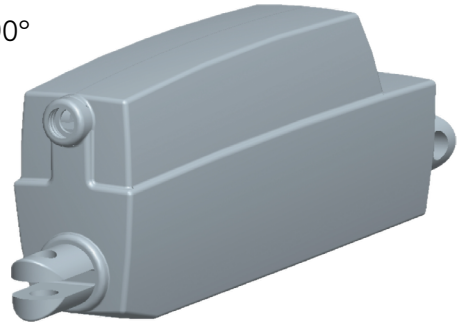
	Piston rod eye		
Back fixture	**Option “02”**	**Option “03”**	**Piston rod eye without slot**
Option “3”	255 mm ± 2 mm	255 mm ± 2 mm	245 mm ± 2 mm
Option “4”	255 mm ± 2 mm	255 mm ± 2 mm	245 mm ± 2 mm
Option “5”	255 mm ± 2 mm	255 mm ± 2 mm	245 mm ± 2 mm
Option “6”	255 mm ± 2 mm	255 mm ± 2 mm	245 mm ± 2 mm

Back fixture orientation

Position 1 = 0°



Position 2 = 90°



Excess silicone may occur on the housing of the actuator as a natural part of the assembly process.

The piston rod eye is only allowed in 0 or 180 degrees orientation.

Electrical installation

- To ensure maximum self-locking ability, please make sure that the motor is shorted when stopped. Actuators with Integrated Controller provide this feature, so long as the actuator is powered.
- When using actuators without Integrated Controller, it is strongly recommended to use a fuse between power supply and actuator.

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
12xx00-1xxx12xx	2	750	-	4.6	-	9.2
12xx00-1xxx24xx	2	750	2.2	-	4.4	-
12xx00-2xxx12xx	4	300	-	2.5	-	5.0
12xx00-2xxx24xx	4	300	1.5	-	3.0	-
12xx00-3xxx12xx	6	200	-	2.2	-	4.4
12xx00-3xxx24xx	6	200	1.0	-	2.0	-

Standard

Feedback: 0 (Ordering example value for place 4)

Power

BROWN Motor +/-

BLUE Motor -/+

Input/Output	Specification	Comments
Description	Permanent magnetic DC motor.	
Brown	12 or 24 V DC (+/-) 12 V ± 20 % 24 V ± 10 % Under normal conditions: 12 V: max. 5 A (depending on load) 24 V: max. 2.5 A (depending on load)	To extend actuator: Connect Brown to positive Connect Blue to negative To retract actuator: Connect Brown to negative Connect Blue to positive
Blue		

Standard with Mechanical potentiometer feedback - Absolute positioning

Feedback: P (Ordering example value for place 4)

Power

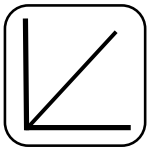
RED	Motor +/-
BLUE	Motor -/+

Signal

GREEN	Signal power supply
YELLOW	Potentiometer feedback
BLACK	Signal power supply GND

Please be aware that if the power supply is not properly connected, you might damage the actuator!

Standard with Mechanical potentiometer feedback - Absolute positioning

Input/Output	Specification	Comments
Description	The actuator can be equipped with a mechanical potentiometer, 10 kohm, providing an analogue feedback signal when the actuator moves.	
Red	12 or 24 V DC (+/-) 12 V ± 20 % 24 V ± 10 % Under normal conditions: 12 V: max. 5 A (depending on load) 24 V: max. 2.5 A (depending on load)	To extend actuator: Connect Red to positive Connect Blue to negative To retract actuator: Connect Red to negative Connect Blue to positive
Blue		
Green	Signal power supply (+) 12/24 V DC	+10 V or other value
Black	Signal power supply GND (-)	
Yellow	Potentiometer feedback Slide potentiometer, 10 kohm 1 kohm = 0 mm stroke 11 kohm = 100 mm stroke Maximum effect: 0.1 W	Linearity: ± 20 % Minimum lifetime: 15,000 cycles Average lifetime: 40,000 cycles Max. current output: 1 mA

Standard with Analogue feedback - Absolute positioning

Feedback: B or C (Ordering example value for place 4)

Power

RED	Motor +/-
BLUE	Motor -/+

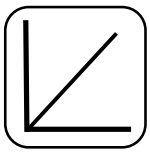
Signal

GREEN	Signal power supply
YELLOW	Analogue feedback
BLACK	Signal power supply GND

If you wish to use the endstop signals, you will have to keep power on the Brown, Blue, Red and Black wires. Otherwise, the signal will be lost.

The signal power must be turned on at all times when the actuator is running, and minimum one second before it starts to run.

Standard with Analogue feedback - Absolute positioning

<table>
<tr><th>Input/Output</th><th>Specification</th><th>Comments</th></tr>
<tr><td>Description</td><td>The actuator can be equipped with an electronic circuit that gives an analogue feedback signal when the actuator moves.</td><td></td></tr>
<tr><td>Red</td><td>12 or 24 V DC (+/-)

12 V ± 20 %
24 V ± 10 %</td><td rowspan="2">To extend actuator:
Connect Red to positive
Connect Blue to negative
To retract actuator:
Connect Red to negative
Connect Blue to positive</td></tr>
<tr><td>Blue</td><td>Under normal conditions:

12 V: max. 5 A (depending on load)
24 V: max. 2.5 A (depending on load)</td></tr>
<tr><td>Green</td><td>Signal power supply (+) 12/24 V DC</td><td rowspan="2">Current consumption:
Max. 60 mA during run and pause
A higher inrush current will be accrued</td></tr>
<tr><td>Black</td><td>Signal power supply GND (-)</td></tr>
<tr><td rowspan="2">Yellow</td><td>Analogue feedback
0-10 V
0.5-4.5 V</td><td rowspan="2">Tolerances +/- 0.2 V
Max. current output: 1 mA
Ripple max. 200 mV
Transaction delay 100 ms
Linear feedback 0.5 %</td></tr>
<tr><td>Analogue feedback
0-10 V
0.5-4.5 V</td></tr>
</table>

For actuators with analogue feedback it is recommended to fully extract and retract the actuator on a regular basis (thereby activating the limit switches) in order to ensure precise positioning.

Actuator with IC - Without endstop signals

IC option: D (Ordering example value for place 4)

Power

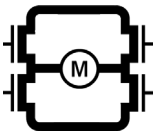
BROWN	Motor +/-
BLUE	Motor -/+

Signal

RED	Extends the actuator
BLACK	Retracts the actuator

Please be aware that if the power supply is not properly connected, you might damage the actuator!

Actuator with IC - Without endstop signals

Input/Output	Specification	Comments
Description	Easy-to-use interface with integrated power electronics (H-bridge). The version with "IC option" cannot be operated with a PWM power supply.	
Brown	12 or 24 V DC (+/-) 12 V ± 20 % 24 V ± 10 % Under normal conditions: 12 V: max. 5 A (depending on load) 24 V: max. 2.5 A (depending on load)	Note: Do not 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 current limits will automatically increase to 7 A for 12 V and 4 A for 24 V
Blue	12/24 V DC - (GND) Connect Blue to negative	
Red	Extends the actuator	The signal becomes active at: > 67% of V_{IN} The signal becomes inactive at: < 33% of V_{IN} Input current: 10 mA
Black	Retracts the actuator	

Current cut-offs should not be used as stop function! This might damage the actuator.
Current cut-offs should only be used in emergencies!

Current cut-off limits are not proportional with the load curves of the actuator.
This means that the current cut-offs cannot be used as load indicator.

There are tolerances on the spindle, nut, gear wheels etc. and these tolerances will have an influence on the current consumption for the specific actuator.

Actuator with IC - Position feedback and endstop signals

IC option: T, F, S, or K (Ordering example value for place 4)

Power

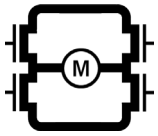
BROWN	Motor +/-
BLUE	Motor -/+

Signal

RED	Digital input
BLACK	Digital input
YELLOW	Digital output
GREEN	Digital output
VIOLET	Feedback
WHITE	Signal GND

Please be aware that if the power supply is not properly connected, you might damage the actuator!

Actuator with IC - Position feedback and endstop signals

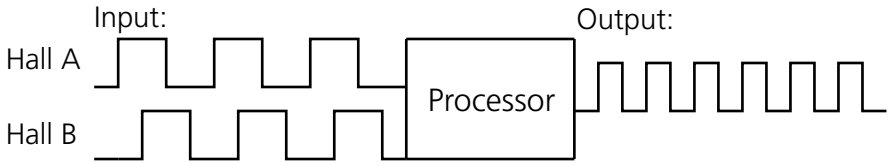
Input/Output	Specification	Comments
Description	Easy-to-use interface with integrated power electronics (H-bridge). The actuator can also be equipped with an electronic circuit that gives an absolute or relative feedback signal. The version with "IC option" cannot be operated with PWM (power supply).	
Brown	12 or 24 V DC (+/-) 12 V ± 20 % 24 V ± 10 % Under normal conditions: 12 V: max. 5 A (depending on load) 24 V: max. 2.5 A (depending on load)	Note: Do not 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 current limits will automatically increase to 11 A
Blue	12/24 V DC - (GND) Connect Blue to negative	
Red	Extends the actuator	The signal becomes active at: > 67% of V_{IN} The signal becomes inactive at: < 33% of V_{IN} Input current: 10 mA
Black	Retracts the actuator	
Green	Endstop reached out	Output voltage min. V_{IN} - 1 V Source current max. 100 mA Endstop signals are NOT potential free.
Yellow	Endstop reached in	

Actuator with IC - Position feedback and endstop signals

<table>
<tr><th>Input/Output</th><th>Specification</th><th>Comments</th></tr>
<tr><td rowspan="5">Violet</td><td>Mechanical slide potentiometer:
0-10 V
Slide potentiometer, 10 kohm
1 kohm = 0 mm stroke
11 kohm = 100 mm stroke
The maximum effect: 0.1 W</td><td>Max. 100 mm stroke
Linearity: ± 20 %
Minimum lifetime: 15,000 cycles
Average lifetime: 40,000 cycles
Max. current output: 1 mA</td></tr>
<tr><td>Analogue feedback:
0-10 V
0.5-4.5 V</td><td>Tolerances +/- 0.2 V
Max. current output 1 mA
Ripple max. 200 mV
Transaction delay 100 ms
Linear feedback 0.5 %</td></tr>
<tr><td>Single Hall sensor (Option S):

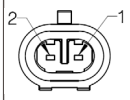
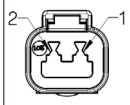
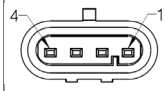
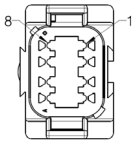
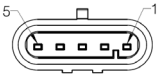
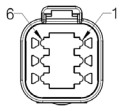
Option S: 10-pole magnet based on two Hall sensors XOR

Actuator mm per count*
12xSxx-1 0.1 mm
12xSxx-2 0.2 mm
12xSxx-3 0.3 mm

Frequency is 14-26 Hz on Single Hall output depending on load.
Every pulse is “ON” for minimum 3 ms.
Overvoltage on the motor can result in shorter pulses.</td><td>Max. current output 12 mA
Output = Input -1 V
Min. on time: 3 ms</td></tr>
<tr><td>None (Option D)</td><td>Not available with feedback or endstop reached out.</td></tr>
<tr><td>Valid for XOR:

</td><td></td></tr>
<tr><td rowspan="2">White</td><td>Signal GND</td><td>Only for mechanical slide potentiometer and analogue feedback
Max. 1 mA</td></tr>
<tr><td>Ready signal</td><td>Only for Single Hall</td></tr>
</table>

*A Hall count occurs every time the signal changes direction, either upwards or downwards
A Hall pulse consists of two Hall counts.

Connection overview

	AMP 2-pin	Deutsch 2-pin	AMP 4-pin	Deutsch 8-pin	AMP 5-pin	Deutsch 6-pin
						
Variant	**None**		**IC**		**None (With feedback, no EOS)**	
Wire colour	**Pin**					
BROWN	2	2	2	2	-	-
BLUE	1	1	1	1	1	1
RED	-	-	4	4	2	2
BLACK	-	-	3	3	3	3
YELLOW	-	-	-	7	5	5
GREEN	-	-	-	8	4	4
VIOLET	-	-	-	6	-	-
WHITE	-	-	-	5	-	-

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. Also check whether 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

See warranty disclaimer.

Main groups of disposal

LINAK's 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
LA12	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). LINAK's 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 personnel 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.

Test of conducted and radiated emission (EMC)

All TECHLINE® actuators have been tested in accordance with EN55011 class B (2007) (CISPR 11).
A 1 m cable has been used in the test set-up.

Actuator without H-bridge

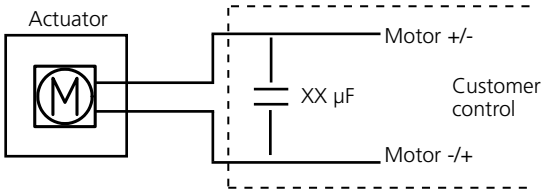
1) For normal operation the following is valid:

- Radiated emission requirements are met.
- Conducted emission requirements are met. However, to meet with these requirements, a capacitor has been mounted across the motor wires outside the actuator, and tests have then been made with this capacitor. Capacitor values for some of the TECHLINE actuators can be found in the scheme below.

To comply with EN55011 class B (2007), a capacitor must be added across the motor wires, or the connected control box must have similar/better filtering. The actuator is not delivered with a built in capacitor, because then it would not be possible to PWM the motor for those who would want to do that.

Please view the scheme below for the correct choice of capacitor for the actuator in question:

Product	Capacitor value
LA12	1 µF



2) For systems/operations that use PWM control it is up to the customer to test and meet the requirements.

Actuator with H-bridge

1) For normal operation with soft start/stop the following is valid:

- The actuator has been tested when operating with constant 80% PWM.
- Radiated emission requirements are met.
- Conducted emission requirements are met.

2) For systems with LINAK® PWM regulation (among other things parallel operation and speed regulation) the following is valid:

- Radiated emission requirements are met.
- Conducted emission requirements are met.

3) Speed regulation:

- If the speed is regulated below a nominal speed of 80% (80%-PWM), it is necessary to mount a filter in order to comply with the conducted emission requirements. For systems/operations that are speed regulated, it is up to the customer to test and meet the requirements.

DECLARATION OF CONFORMITY

LINAK A/S

Smedevænget 8

DK - 6430 Nordborg

Hereby declares that

Actuator 12****-********

(The '*' in the product description can either be a character or a number, thereby defining the variation of the product)

complies with the EMC Directive 2014/30/EU according to following standards:
EN IEC 61000-6-1:2019, EN IEC 61000-6-2:2019, EN IEC 61000-6-3:2021, EN IEC 61000-6-4:2019

complies with RoHS2 Directive 2011/65/EU according to the standard:
EN 63000:2018

Nordborg, 2023-09-15



LINAK A/S
John Kling, B.Sc.E.E.
Regulatory Affairs Manager
Authorized to compile the relevant technical documentation

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Original declaration

DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

LINAK A/S
Smedevænget 8
DK - 6430 Nordborg

LINAK A/S hereby declares that LINAK DESKLINE® products, characterised by the following models and types:

Control Boxes	CBD6S
Linear Actuators	DB5, DB6, DB14, LA23, LA31
Lifting Columns	DL1A, DL2, DL4S, DL5, DL6, DL8, DL9, DL10, DL11, DL12, DL14, DL15, DL16, DL17, DL18, DL19, DL20, DL21, BASE1, LC1
Desk Panels	DPA, DPB, DPH, DPF, DPG, DPT, DP1CS, DPI
Wireless Controls	BP10
Frames and Feet	Kick & Click, DF2, DF3, DF4, DF5, DLF
Accessories	BA001, BLE2LIN, CHUSB, DESK Sensor, SLS, SMPS, USB2LIN, WiFi2LIN, DC Connector, RFRL

LINAK A/S hereby declares that LINAK HOMELINE® products, characterised by the following models and types:

Control Boxes	CBD6DC
Linear Actuators	LA10, LA18, LA40 HOMELINE, BASE1
Dual Actuators	TD4, TD5
Controls	BP10, HC10, HC20, HC40, HC50, HC60
Accessories	BA002, CP, BLE2DC, BLE2LIN, LED Light Rail, MD1, SMPS, WiFi2LIN

LINAK A/S hereby declares that LINAK MEDLINE® & CARELINE® products, characterised by the following models and types:

Control Boxes	CA10, CA20, CA30, CA40, CA63, CAL40, CB6, CB6S, CB6P2, CB8, CB9, CBJ2, CBJ Care, CBJ Home, CO41, CO53, CO61, CO65, CO71, COL50, OPS, PJ2
Linear Actuators	KA19, KA30, KA30 ICA, LA20, LA23, LA24, LA24 ICA, LA27, LA28, LA29, LA30, LA31, LA34, LA40, LA42, LA44
Lifting Columns	BL1, LC1, LC3
Controls	ABL, ACC, ACK, ACO, ACOD, ACOM, ACL, DP, DPH, FS, FS3, FPP, HB30, HB70, HB80, HB100, HB190, HB200, HB400, HD80, HL70, HL400, SC01
Accessories	BA15, BA16, BA18, BA19, BA22, BAJ, BAJL, BAL40, BAL50, CH01, CHJ2, CHL40, CHL50, DJB, LIN2OB, MJB2, MJB5 Plus, Massage Motor, PJB4, QLCI2, SLS, SMPS10, UBL, UBL2, UBL4 Motion, USB-A Power Adapter

LINAK A/S hereby declares that LINAK TECHLINE® products, characterised by the following models and types:

Linear Actuators	LA12, LA14, LA21, LA23, LA25, LA30, LA33, LA35, LA36, LA37, LA73, LA76, LA77
Lifting Columns	LC3 IC
Accessories	FMB

comply with the following parts of the Machinery Directive 2006/42/EC, ANNEX I, Essential health and safety requirements relating to the design and construction of machinery: 1.5.1 Electricity supply

The relevant technical documentation is compiled in accordance with part B of Annex VII and this documentation or part hereof will be transmitted by post or electronically to a reasoned request by the national authorities.

This partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive 2006/42/EC where appropriate.

Nordborg, 2026-05-18



LINAK A/S

John Kling, B.Sc.E.E., Certification and Regulatory Affairs
Authorised to compile the relevant technical documentation

Original declaration

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 (Spólka 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
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

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