Actuators for mobile robots in material handling

LINAK®
WE IMPROVE YOUR LIFE

LINAK.COM/TECHLINE

Dynamic and on-the-spot technology

Clever product development is not always about inventing something completely new. So instead, we have added new features to our field-tested actuators to meet the latest market demands: Compact design, interfaces that follow industrial standards, and a global operating organization, ensure that you get what you want and need. We are your solution partner for lifting applications in material handling.

ELECTRIC WINS!
A typical warehouse truck may have to lift 1000 mm or 1000 kg - typical domain of hydraulics. Here LINAK® has an ace up its sleeve. Our high-power actuator can handle a weight of 1 ton and in addition to that, offer the option of parallel run.

Good news for material handling applications with tight installation space

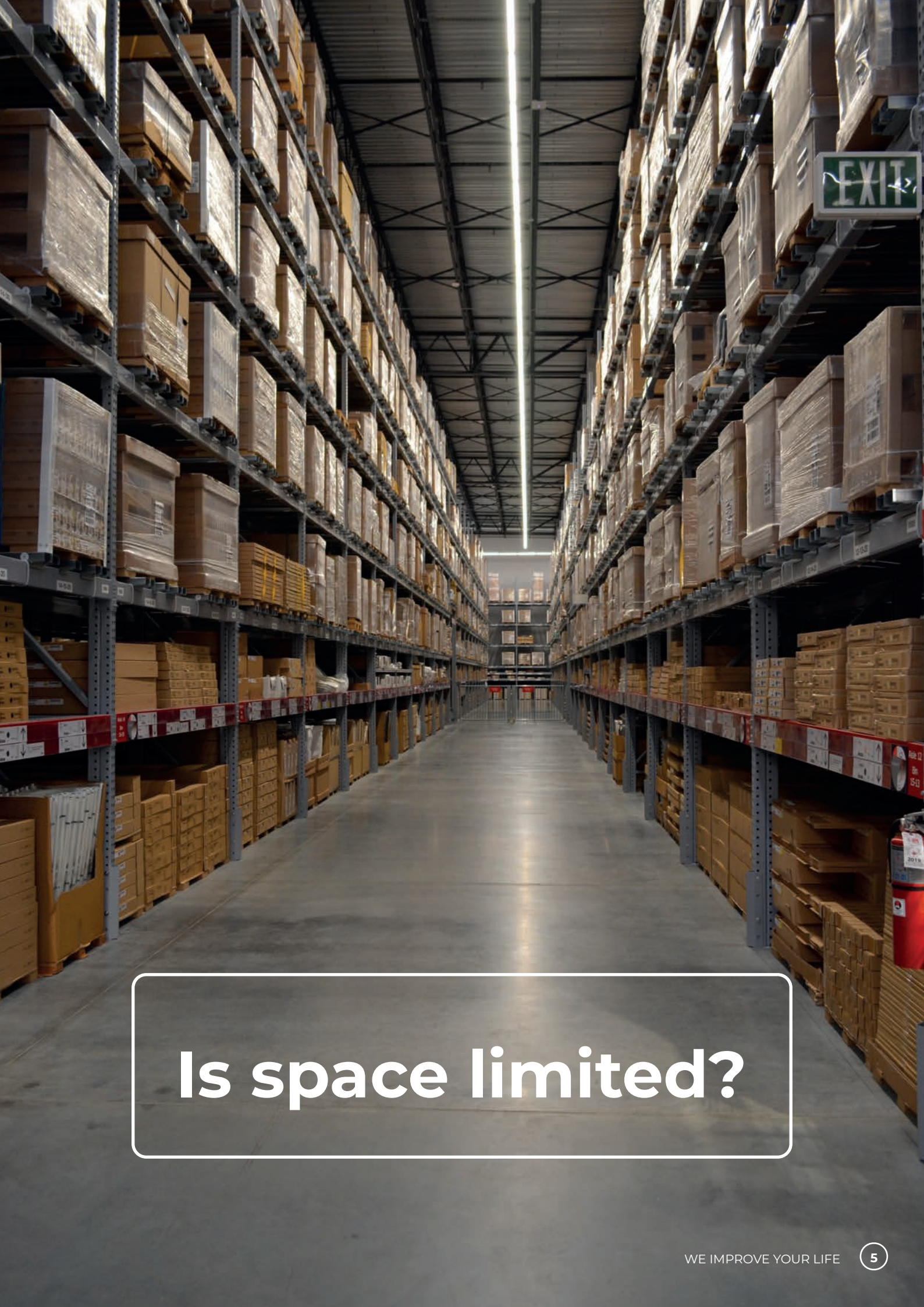
Our electric actuators are real space savers!

Save external sensors
Actuators with integrated controller (IC) make additional external sensors for position control obsolete.

24 V or 48 V ready
Our actuators feature 24 V or 48 V motor options. This means that converters or motor controllers can be omitted.

CANopen or IO-Link on board
Actuators with integrated controller (IC) come with standard industrial interfaces, such as CANopen or IO-Link, eliminating the need for extra gateways.

Compact design
Electric linear actuators have fewer components than hydraulic or pneumatic systems, as there is no need for hoses, pumps, and compressors. With the actuator and the connector plugged in, you are good to go.



Is space limited?

Parallel Run: Perfectly synced without additional controls

To raise the overall thrust or balance the load, you have the option of running our actuators in parallel. Up to eight actuators can be linked to each other for a perfectly synchronised parallel movement. This is one of the many options we offer with our integrated controller actuators.

Additional control or cabling is not necessary. The actuators communicate directly with each other via their own BUS system.

IT DOES NOT GET EASIER THAN THAT!

Save time and profit from data

Choose actuators with integrated controller

By using our actuators with integrated controller (IC), you get a reliable yet smart motion solution. We added the controller to the actuator to eliminate the need for external control boxes, relays, and sensors as well as extra cables. Keeping it simple, the actuators feature various industrial interfaces, such as CANopen or IO-link, which align perfectly with the control system of your application. This eases both installation, control, and diagnosis.

But that is not all. Our IC actuators also collect data that can be used for different purposes, such as condition monitoring, predictive maintenance, and digital twin. For example, monitoring the health status of the actuator by overcurrent or temperature protection, prevents sudden breakdowns or excess strain.

The many benefits of IC actuators include precise positioning and parallel run, on command – which means you can run to target and achieve your goal.

Imagine travelling to a foreign country and being able to speak the local language straight away!

> “To the user, the interface is the product.”
> Aza Raskin, Co-founder of the Center for Human Technology and Earth Species Project.

CANopen is the common language in both material handling and industrial automation.

Our actuators with CANopen are used in a wide range of applications, some of them with a high degree of automation and complexity. Speaking the same language makes your life easier.

Feedback signals via CANopen allow for digital twin as well as remote condition monitoring and diagnostics.

This not only contributes to streamlining the prototyping phase, it also simplifies troubleshooting and maintenance scheduling. The CANopen actuators are easy to configure and integrate – feeling right at home in the application.

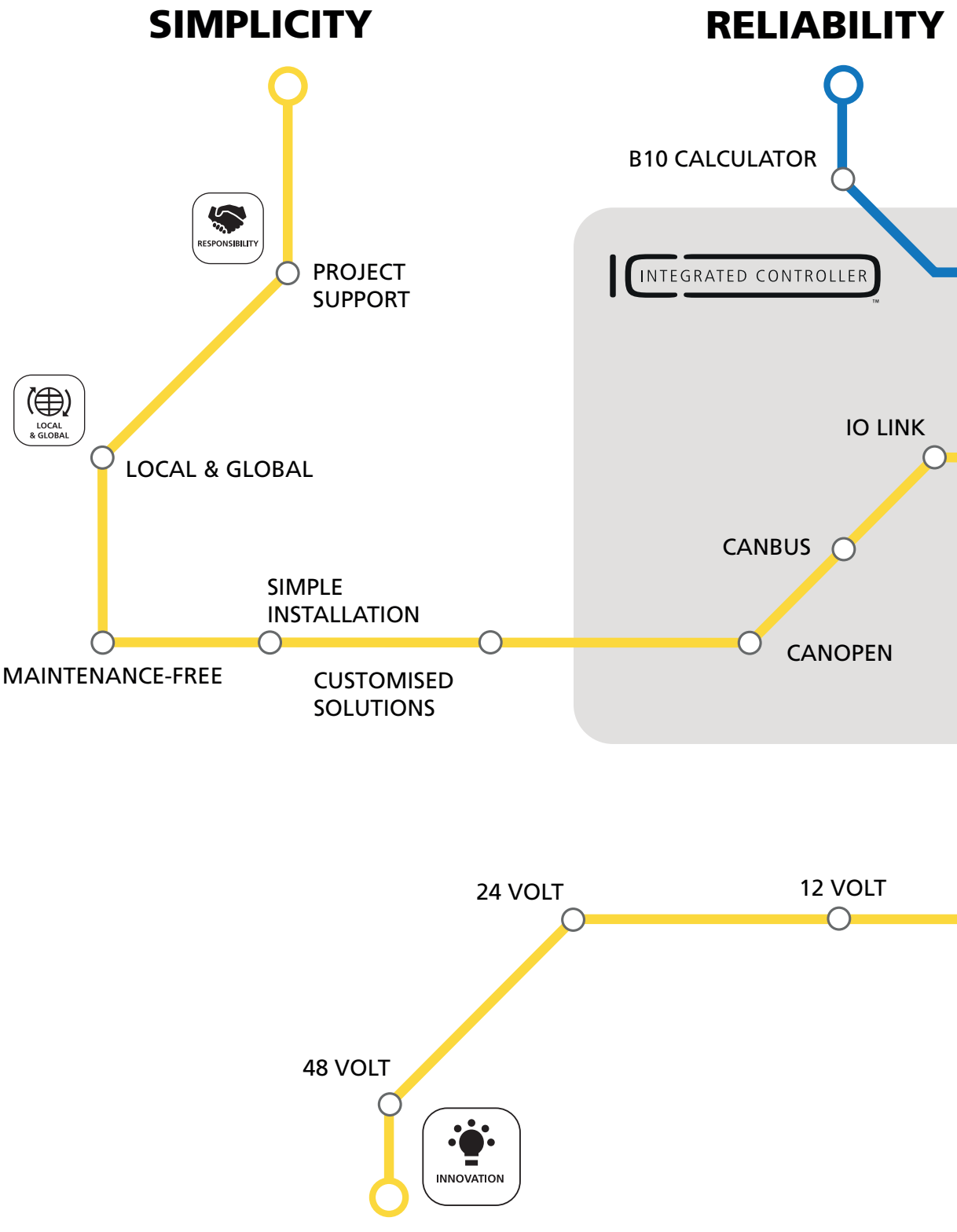
LINAK® CANopen includes the linear actuators: LA14, LA25, LA33, LA36 and LA37.

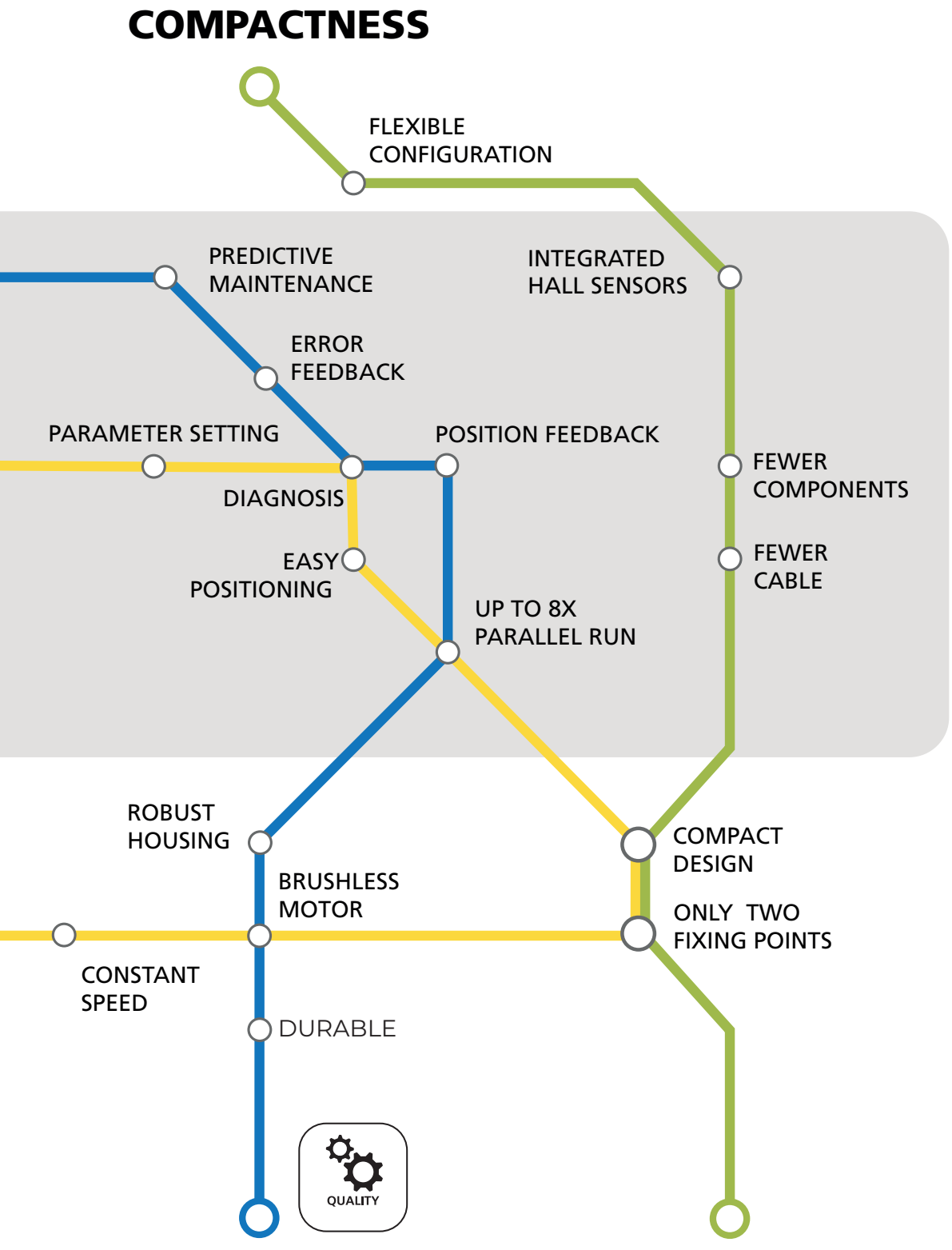
> "When using CANopen linear actuators, we can read out all kinds of data about power consumption, position, speed and performance status. This opens up far better control possibilities and allows us to fix problems faster and help our customers more quickly."
>
> Kim Andersen, Electrical Design Manager at Versalift.

CANopen®

ACTUATOR NAVIGATOR

We help you reach your destination




COMPACTNESS
FLEXIBLE CONFIGURATION
PREDICTIVE MAINTENANCE
INTEGRATED HALL SENSORS
ERROR FEEDBACK
PARAMETER SETTING
POSITION FEEDBACK
FEWER COMPONENTS
DIAGNOSIS
FEWER CABLE
EASY POSITIONING
UP TO 8X PARALLEL RUN
ROBUST HOUSING
COMPACT DESIGN
BRUSHLESS MOTOR
ONLY TWO FIXING POINTS
CONSTANT SPEED
DURABLE
QUALITY
QUALITY AND VALUES
INTEGRATION

The first electric actuator with IO-Link Interface

The usage of the IO-Link protocol is expanding to new fields of application. To bring forward the many benefits of this smart interface, we decided to develop the world's first IO-Link actuator. The objective of IO-Link is to provide a common platform for rapid development and easy integration of sensors and actuators. Adding an industry standard, such as IO-Link to our actuators, just made things easier for you.

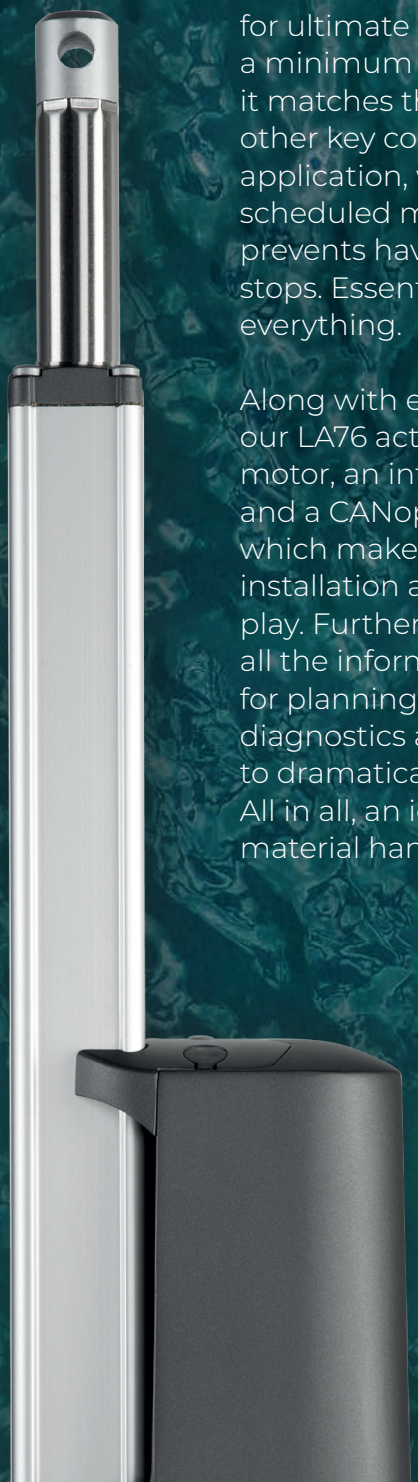
IO-Link

The benefits of our IO-Link actuators are clear:

- They are easy to integrate into existing systems
- The available status and diagnostics data will support service maintenance
- Remote configuration enables smarter movement
- Maximize uptime, as the actuators are quick and easy to replace if necessary

Meet the Athlete in our Linear Actuators!

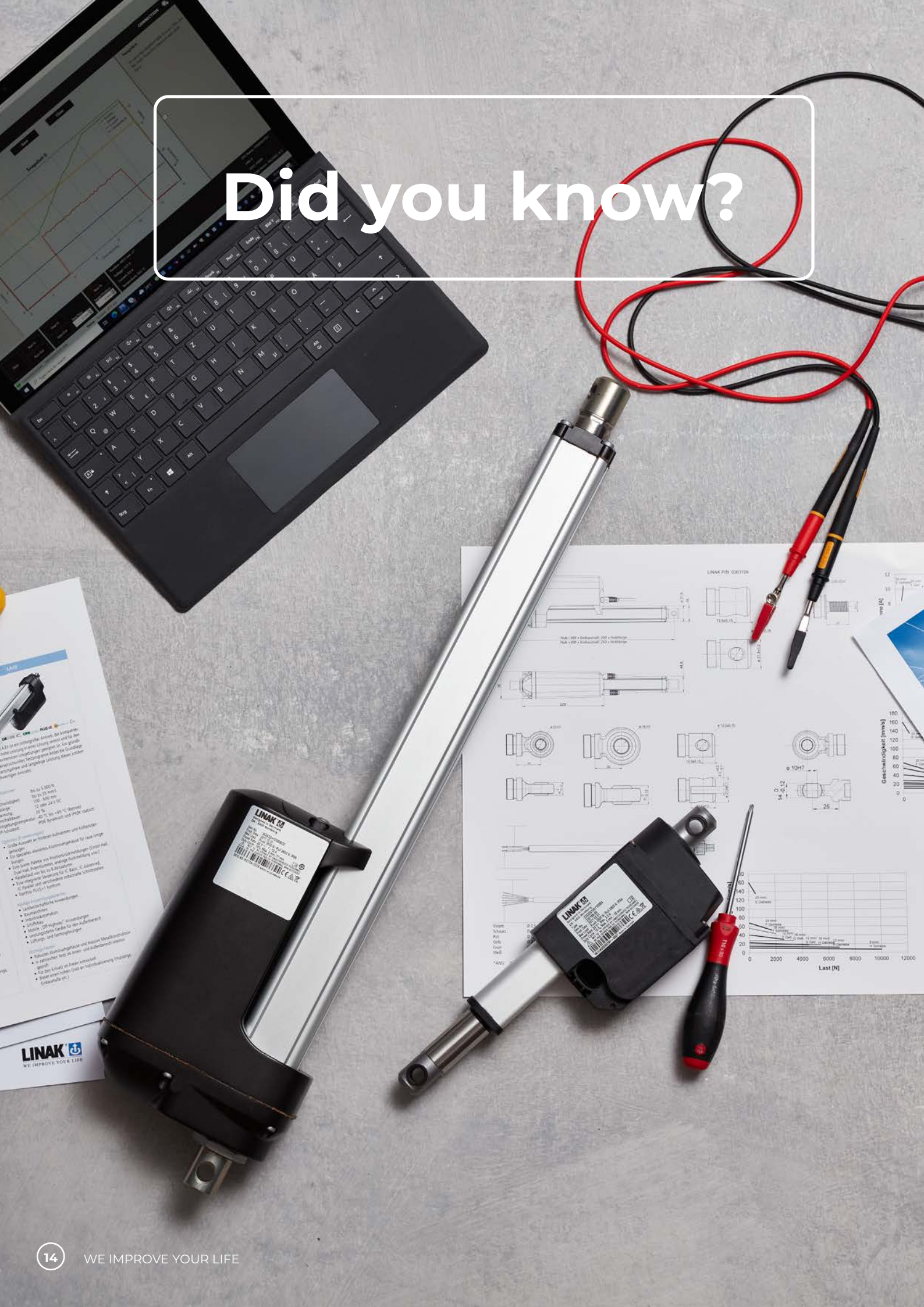
The brushless motor extends lifetime



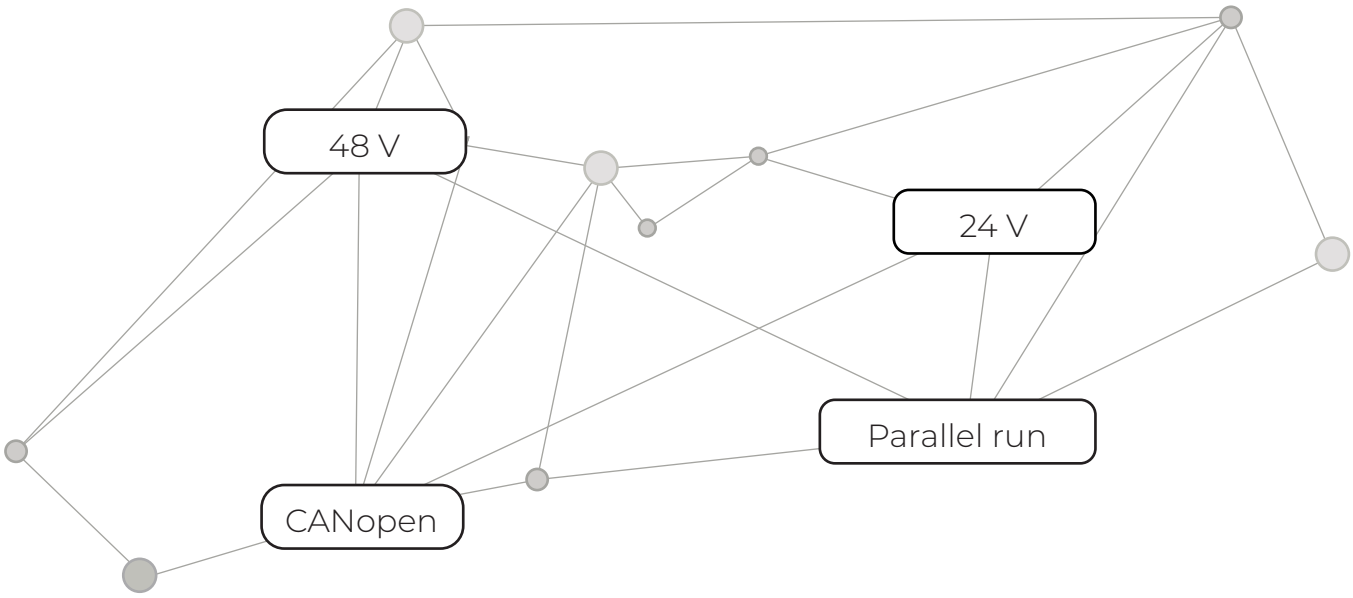
Featuring a brushless DC motor, the LA76 actuator has the muscle for ultimate endurance. With a minimum of 200,000 cycles, it matches the lifetime of the other key components in your application, which allows for scheduled maintenance and prevents having to make extra stops. Essential when uptime is everything.

Along with extreme durability, our LA76 actuator features a 48 V motor, an integrated controller, and a CANopen interface, which makes integration and installation as easy as plug and play. Furthermore, you get all the information you need for planning maintenance, diagnostics and troubleshooting to dramatically cut service costs. All in all, an ideal match for material handling.

Did you know?



Your can get our actuators with a combination of any of the following features:



- Save extra converters or external motor controllers to adapt the voltage level
- The direct power supply results in less power loss because no power conversion is required. This gives you longer battery runs between charging stops
- CANopen is an obvious choice because it is a standard protocol used in material handling
- Even higher thrust with the option of parallel run

48 volts on board

48 V on-board power supply is the mainstream for industrial trucks to meet the capacity-related power demand. For the increasing number of 48 V applications, conventional actuator solutions are not easy to integrate and install. With regular 24 V actuators, you need a converter module or extra motor controller to transform the voltage from 48 V to 24 V. LINAK® actuators come 48 V ready, requiring less installation effort.

Take a glimpse into the future with our B10 Life calculator!

Predicting the lifespan of your actuator can be challenging, as different applications and conditions place varying demands on components. However, because the B10 life is based on a combination of real-life testing data and specific use cases, it is possible to confidently estimate the lifetime of a LINAK® actuator in your application. This is vital knowledge - both when developing a new application and when planning maintenance.

Predicting lifetime with B10 data

B10 is a value used to estimate product lifetime. It provides a statistical life expectancy indication describing that minimum 90% of the products in your batch will meet or exceed lifetime expectations, when used in accordance with product specifications.

Actuator lifetime: From speculation to reality

Even though the B10 lifetime is based on statistics, the results of the estimations are highly qualified, and the life expectancy of an actuator can be confidently estimated. Knowing the service life of an actuator adds value to all fields of application, as everyone can benefit from knowing what to expect.

First online tool

The B10 lifetime calculator is available on the LINAK website for the LA36 actuator. Simply enter your specific load and stroke to receive an instant prediction of your chosen actuator's lifetime. The calculation can be done with both fixed and varying loads.

"I am convinced that especially end users with actuators located in places that are hard to access will appreciate the B10 calculator. It will be a great help to know the service life of the equipment to prevent downtime of the whole application."

Søren Buck, TECHLINE® Business Development Manager

LA14

750 N	45 mm/s	19-130 mm

CANopen IC
CAN J1939 PLUS+1 Powered by Danfoss

LA25

2.500 N	25 mm/s	20-300 mm

CANopen IO-Link IC
CAN J1939 PLUS+1 Powered by Danfoss

LA33

5.000 N	35 mm/s	100-600 mm

CANopen IC
CAN J1939 PLUS+1 Powered by Danfoss

LA36

6.800 N	168 mm/s	100-1200 mm

CANopen IC
CAN J1939 PLUS+1 Powered by Danfoss

We support you locally – every step of the way

Listening to customers and understanding their needs is crucial for the development of innovative lifting and adjustment systems. That is why LINAK® relies on a strong team of competent and motivated employees, both in the development department at our headquarters in Denmark, and globally in our numerous subsidiaries. Our customers appreciate the proximity and the close exchange with LINAK sales engineers and logistics specialists.

+2,400 **Employees**	HQ: **Guderup, Denmark**	R&D **Denmark, USA & China**
1,200 **Patents**	+30 **Subsidiaries**	6 **Factories**

For further information about TECHLINE:
LINAK.COM/SEGMENTS/TECHLINE/

LINAK® accepts no responsibility for possible errors or inaccuracies in catalogues, brochures, and other material. LINAK reserves the right to change its products without prior notice. LINAK cannot guarantee product availability and reserves the right to discontinue the sale of any product. User is responsible for determining the suitability of LINAK products for a specific application. All sales are subject to the 'Standard Terms of Sale and Delivery', available on LINAK websites.

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

QUALITY

Built by market leading experts, using state-of-the-art technologies and perfected production methods, you can expect the same quality worldwide.

INNOVATION

Innovation is in our core. We take the lead and have the courage to make it real.

RESPONSIBILITY

We are responsible in what we do – towards customers, employees and the environment. Creating trust is a natural part of who we are.

LOCAL & GLOBAL

From global presence to local understanding. We believe in world-wide support and being close to our customers.

LINAK.COM

LINAK®
WE IMPROVE YOUR LIFE

MA M9-02-919-B - 2024.09 - Printer: grafisk arbejde