



# Safety

# Safety is mandatory at LINAK®



Different healthcare applications need different safety features. Regardless of what application you are designing, LINAK offers a wide variety of standard and optional safety features.

This folder will give you a broader insight into some of our safety features.

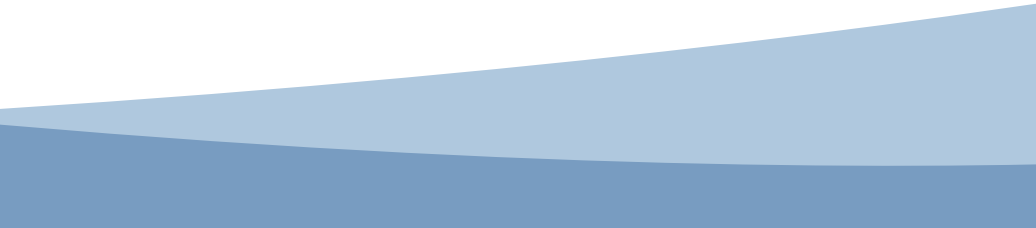


# Rely on your actuator

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Based on many years of experience in developing electrical actuator solutions LINAK® understands the importance of mixing quality with safety, functionality and design.

In order to meet the extremely high standards for healthcare equipment, LINAK actuators contain many different safety features to make sure that you can rely on your actuator at all times.








**Self-lock:** To avoid actuator drifting, and potentially creating dangerous situations, LINAK® actuators come with a self-lock function. The minimum self-lock always equals the max. thrust lifting performance.

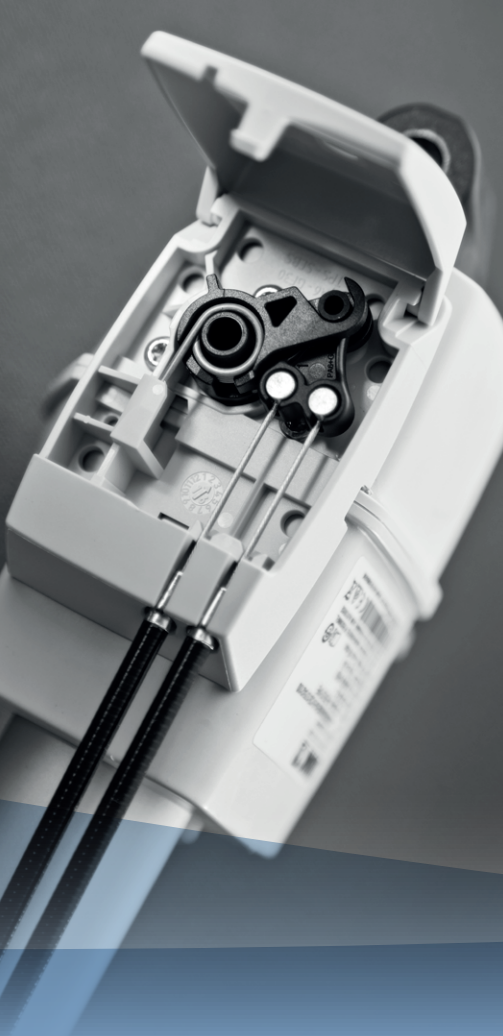
**Mechanical end-stop** is an extra safety feature, making the actuator first-failure-safe. If the electrical end-stop switch should ever fail, the mechanical end-stop effectively stops all movement.





**Safety nut:** A safety nut acts as a precaution against potential failure of the main nut. If the main nut breaks, the safety nut will immediately carry the full load and thereby prevent potentially harmful falling.

**Spline:** LINAK® offers three different types of spline: mechanical, electrical and ratchet spline. All three spline types prevent accidental squeezing of limbs between moving parts in an application and prevent the application from being damaged.

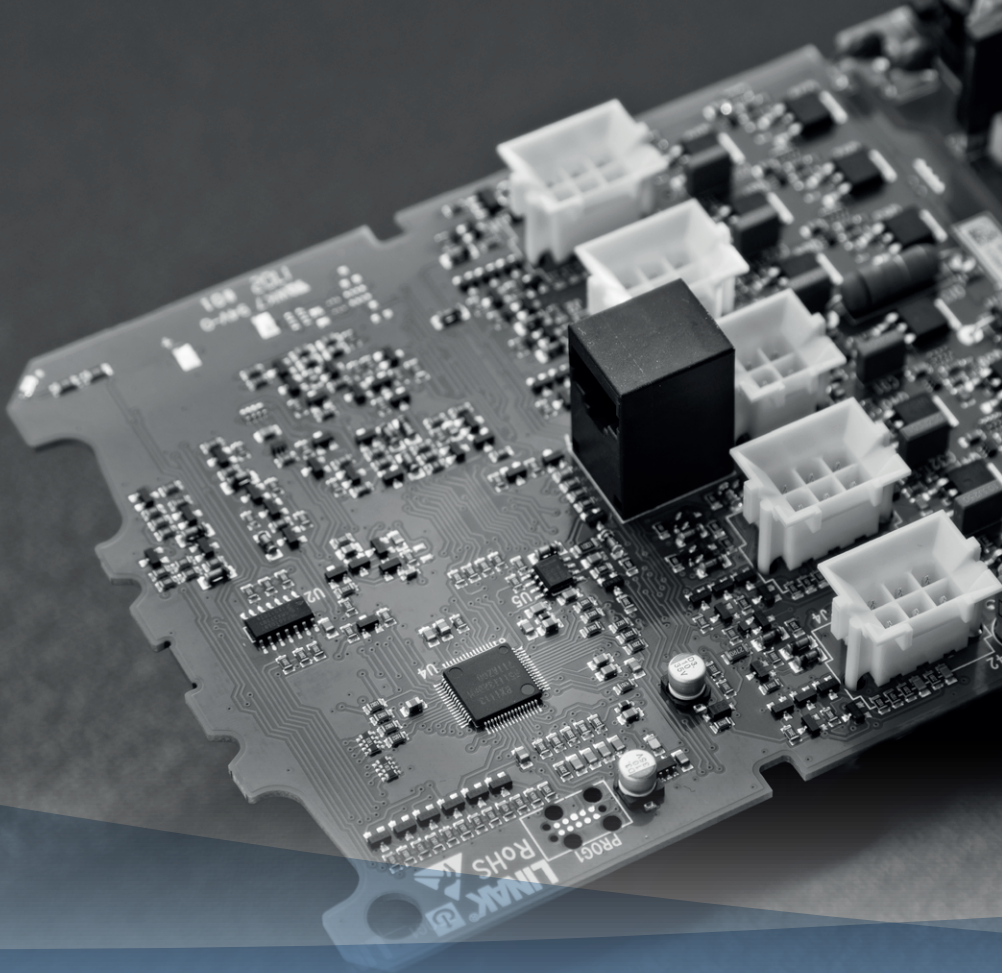






**Quick release** is an important functionality that ensures fast lowering of the application in emergency situations, e.g. if CPR is needed.

**Manual lowering** is a standard safety feature for lifting actuators in hoists and is used in emergency situations if a power cut occurs.



# LINAK<sup>®</sup> OpenBus<sup>™</sup>

## - safety included



LINAK has a series of intelligent OpenBus<sup>™</sup> control boxes. Apart from being able to coordinate multiple actuators to form complex and precise movement patterns, they include several safety-improving features like e.g.

**Power Request:** The LINAK OpenBus<sup>™</sup> technology platform includes a unique safety concept consisting of two separate circuits - data and power request. Both data and power request need to be active to run a function. This reduces the risk of unintended movement to an extremely low level, increasing the safety of the application.





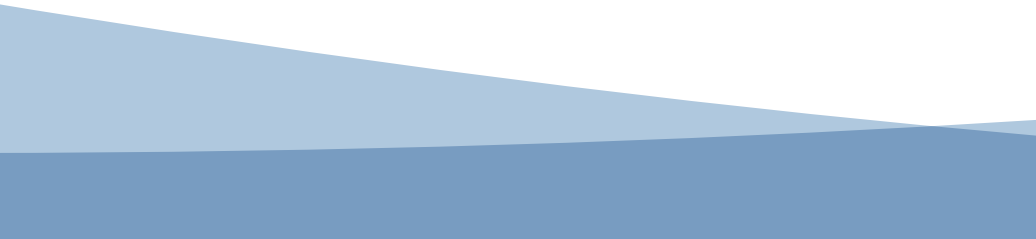
**Mains indicator:** LINAK® control boxes have a mains indicator. This shows that the application is connected to mains, and cannot be moved safely before unplugging the cables. This reduces the risk of damaging the cables.

**Brake alarm:** The LINAK OpenBus™ control boxes have a buzzer, which can be used as a brake alarm. When connected to mains, the system will activate an alarm if the wheels are not braked. This helps prevent damage to your healthcare application and increases patient safety.

# Safety right at hand



The development of LINAK® hand controls for healthcare equipment are based on research and usability studies to ensure proper functionality, intuitive interfaces and ergonomic design. This all increases the safety related to the use of the hand controls.





**PU cables** are able to retain their shape and are not as vulnerable as traditional PVC cables. This prolongs the cable life and prevents damage to the cable when moving the application.

**Locking functionality:** According to the IEC 60601-2-52 it is required that control functions can be locked. LINAK® hand controls or attendant controls provide the possibility of adjusting and locking the use of specific functions and movements, thus preventing the occurrence of a dangerous position via improper use of the control.





# General safety features



Enhancing safety is often a mix of several initiatives. To make healthcare applications able to be in compliance with the rules in force requires a broad focus.

At LINAK® we have a high focus on specific product safety features. However, we also consider overall perspectives of general safety.





**Flammability Classified:** LINAK® products are made of UL94 flammability classified materials – i.e. in compliance with IEC 60601-1 requirements. To minimise the risk of fire hazards, LINAK control boxes are made of UL94 V0 material, an even tougher requirement than stated in IEC 60601-1.

**Cable locking:** LINAK products include cable locks to ensure that cables are connected at all times and the application is ready for electrical movement. The control boxes are constructed with a strong cable lock, protecting cables and plugs against physical stress and strong detergents.





**Service Data Tool (SDT)** makes it possible to read out service data from the OpenBus™ control box by informing about the use of the actuator system. SDT acts as preventive maintenance by disclosing wear and tear long before the system fails. This ensures minimal downtime as maintenance can be scheduled in due time. Efficient maintenance also helps prevent misuse, thus prolonging the equipment life.





**Water protection:** Many healthcare applications must be able to withstand water and detergents when washed. LINAK® products for healthcare are at least IPX4 rated, however, when required, our systems can rate as high as IPX6 Washable DURA™.

If you want to know more about safety and LINAK actuator solutions, please contact us or go to our websites.



About safety



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We are responsible in what we do – towards customers, employees and environment. Creating trust and taking care is in our DNA.



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