

LINAK actuators

Quality electrical
movement for dust
explosive atmospheres



IECEX and ATEX

Ex approvals

For a completely safe and proven operation, equipment used in explosion protected (Ex) industries must be certified in accordance with the IECEx international certification system or the EU directive 94/9/EC, also called the ATEX directive. The IECEx and ATEX directives describe safety requirements for applications and products in explosive atmospheres and account for both mechanical and electrical sources of ignition in these areas.

LINAK offers products that have been tested and certified for electrical operation in dust explosive atmospheres by the notified body TÜV Nord. Our actuators displayed in this folder have all been certified according to both IECEx standards and the ATEX 2D and 3D categories. This means that they can be used in Ex zones 21 and 22 - see the illustration below.

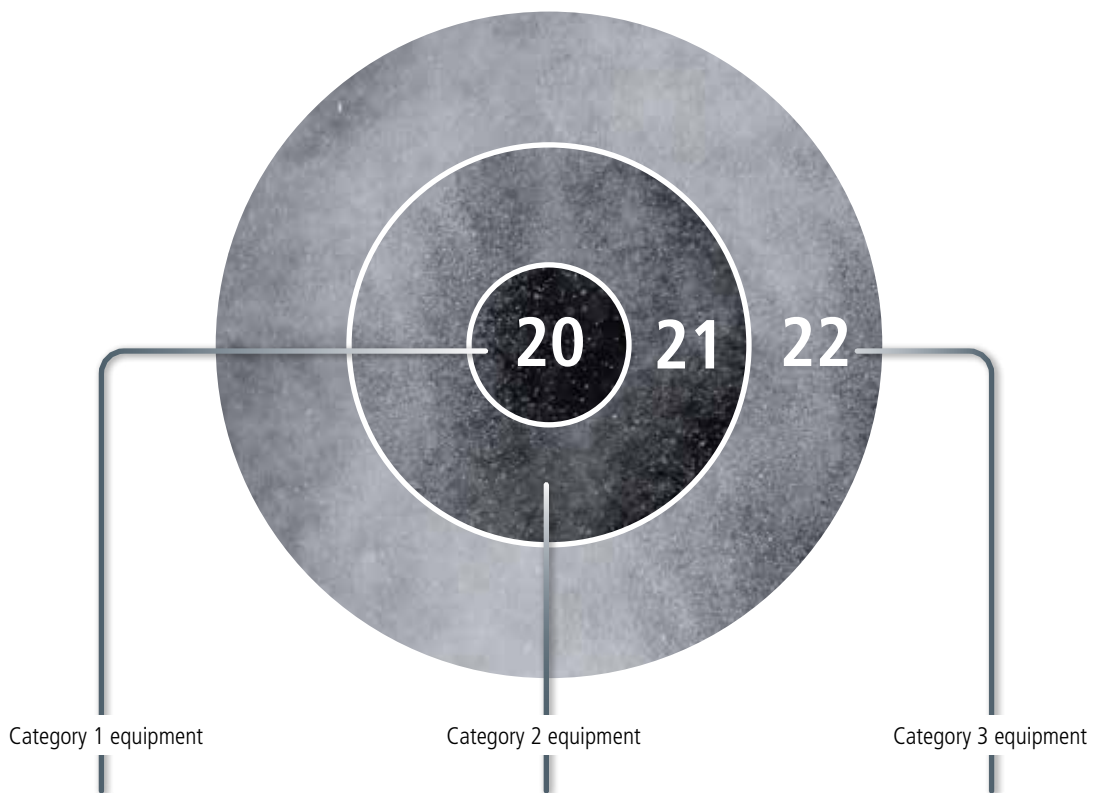
Furthermore, the actuators have been approved for non-mining applications, and for the temperature range of -25°C to +65°C.

When can a dust explosion occur?

Dust explosions require the presence of a combustible substance, oxygen and an ignition source. Both electrically and mechanically generated sparks, arcs and open flames are ignition sources. Mechanically generated sparks are far the most frequent cause of dust explosions.

Dust explosive atmospheres may occur in:

- Power stations
- Grain mills and grinders
- Chemical factories
- Paint factories
- Cement plants
- Animal feeding industries
- Harbour installations
- Woodworking machines
- Ventilation systems
- Other dusty areas



Dust occurs continuously

Zone 20 is a place in which an explosive atmosphere in the form of a cloud of combustible dust in the air is present continuously, for long periods or frequently. This would typically include the inside of containers or pipelines and enclosed conveying equipment.

Dust occurs occasionally

Zone 21 is a place in which an explosive atmosphere in the form of a cloud of combustible dust in the air is likely to occur in normal operation occasionally, for example when discharging and filling equipment.

Dust occurs in short periods

Zone 22 is a place in which an explosive atmosphere in the form of a cloud of combustible dust in the air is not likely to occur in normal operation but – if it does occur – it will persist for a short period only. Areas in which dust escapes from leaks and forms dust deposits are included in this category.

IECEx and ATEX certified actuators

Actuator LA36 - reliable and tough

The actuator LA36 is one of the most solid and powerful LINAK actuators, designed to operate under extreme conditions. The LA36 is a maintenance-free product with a long lifetime. This high-quality actuator offers a very strong alternative to hydraulic solutions.



LA36 features:

- Max thrust up to 10,000 N
 - Max speed up to 160 mm/sec
 - Standard stroke 100-999 mm
 - Voltage 12, 24 or 36 V DC
 - Heavy-duty aluminum housing for harsh conditions
 - Integrated brake, high self-locking ability
 - Hand crank for manual operation
 - Non rotating piston rod eye
 - High-pressure cleaning resistant
- **Available with IC™:**
 - IC - Integrated Controller
 - Integrated Parallel Controller
 - LIN bus communication
 - Analogue or digital feedback for precise positioning
 - Endstop signals
 - PC configuration tool
 - **Available with IECEx and ATEX certifications**



IC INTEGRATED CONTROLLER

IECEX and ATEX certified actuators

Actuator LA25 - tough and compact

With its robust design and aluminium housing, the actuator LA25 is ideal for harsh environments where operation under extreme conditions is required. Furthermore, the compact dimensions of the LA25 make it applicable for confined spaces.



LA25 features:

- Max thrust up to 2,500 N
- Max speed up to 13 mm/sec
- Standard stroke 20-300 mm
- Voltage 12 or 24 V DC
- Heavy-duty aluminium housing for harsh conditions
- Built-in electrical endstop
- High self-locking ability
- Salt spray and chemical tested
- Non rotating piston rod eye
- Steel or stainless steel back fixture and piston rod eye
- Exchangeable cables
- Safety nut in push or pull
- **Available with IC™:**
 - IC - Integrated Controller
 - Integrated Parallel Controller
 - LIN bus communication
 - Analogue or digital feedback for precise positioning
 - Endstop signals
 - PC configuration tool
- **Available with IECEX and ATEX certifications**



Actuator LA14 - robust and reliable

The actuator LA14 is a very tough actuator with an aluminium housing that makes it ideal for use in harsh and demanding environments.

The LA14 offers top quality in every detail and ensures reliable performance. With its small size the LA14 is well suited for applications that require short linear movements.



LA14 features:

- Max thrust up to 750 N
- Max speed up to 45 mm/sec
- Standard stroke 40-130 mm
- Voltage 12 or 24 V DC
- Heavy-duty aluminium housing for harsh conditions
- Stainless steel inner tube and piston rod eyes
- Built-in electrical endstop
- Compact design
- High self-locking ability
- Salt spray and chemical tested
- Exchangeable cables
- Back fixture available in 2 different positions: 0° or 90°
- **Available with IC™:**
 - IC - Integrated Controller
 - Integrated Parallel Controller
 - LIN bus communication
 - Analogue or digital feedback for precise positioning
 - Endstop signals
 - PC configuration tool
- **Available with IECEx and ATEX certifications**



100% function tests

In each application, the actuator is just one component of many, but at TECHLINE® we fully appreciate that it is of utmost importance to you and your customers. Not a single actuator leaves LINAK until it has undergone a 100% function test.

Depending on the actuator type, various tests have been carried through. Please consult your local LINAK office or take a look at the actuator data sheet in question to get a thorough test overview.

This is your guarantee that a solution based on LINAK TECHLINE electric actuator systems is a solution that will work reliably for years and years.

Electrical tests:

All electrical parts are tested i.e. power supply, power and signals cables, control signals etc. Electrical immunity is tested according to industrial standards i.e. for radio noise, electrical discharge and burst.*

(*) These tests do not apply to third party products!

Climatic tests:

In the climatic test the actuators are tested to operate in extreme temperatures as well as to endure rapid changes in temperature. In some tests, the actuator has to withstand going from a +100°C environment to -30°C repeatedly and still maintain full functionality.

Mechanical tests:

Vibration: The actuator must withstand continuous vibration in three directions.

Shock: The shock test puts the actuator through 3 shocks of up to 100 G in each of 6 directions.

Bump: The actuator receives bumps of up to 40 G in each of six directions several hundred times.

- EN/IEC 61000-6-4** - Generic standard emission industry
- EN/IEC 60204** - Electrical equipment of machinery
- EN 50121-3-2** - Railway applications - Rolling stock apparatus
- 94/25/EC** - Recreational crafts directive
- EN/ISO 13766** - Earth moving machinery
- EN/IEC 61000-6-2** - Generic standard immunity industry
- 2004/104/EC** - Automotive Directive
- EN/ISO 14982** - Agricultural and forestry machines
- EN/ISO 13309** - Construction machinery



- EN600068-2-1 (Ab)** - Cold test
- EN60068-2-2 (Bb)** - Dry heat:
- EN60068-2-14** - Change of temperature
- EN60068-2-30** - Damp heat
- EN60068-2-52** - Salt spray
- EN60529-IP66** - Degrees of protection
- BS7691/96 hours** - Chemicals

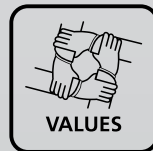


- EN60068-2-36 (Fdb)** - Vibration
- EN60068-2-29 (Eb)** - Bump
- EN60068-2-27 (Ea)** - Shock





LINAK has a well-developed sales and service organisation in Europe, Americas, Asia and Australia. Therefore, we can assist you and your customers locally, under the global sales concept idea:
Be global, act local



We add value to your products by offering innovative solutions, extensive knowledge, world-class production and global presence.



LINAK has a world-class global sales and service organisation. Today we are present in 35 countries all over the world. *For further information about the **TECHLINE** product programme:*
www.linak.com/techline

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