

LINEAR ACTUATOR TECHNOLOGY

**TECHLINE™**  
IMPROVING FLEXIBILITY

**HARSH CONDITIONS, HEAVY LOADS...  
LET THE LA36 DO YOUR DIRTY WORK**



TESTED ACCORDING TO STANDARDS

**LINAK®**   
WE IMPROVE YOUR LIFE

# ROBUST AND RELIABLE, THE LA36 MAKES LIFTING HEAVY LOADS EASY WORK



**Go ahead!** Bring on extreme cold and heat, rapid temperature changes, chemicals, salt, mechanical and electrical strains. The LA36 will handle it all. This newly developed actuator is tested in all kinds of harsh conditions. And one thing is clear. This actuator will stand up to almost any challenge it is faced with.

The LA36 has undergone thorough tests in critical climatic, mechanical and electrical areas. And we must warn you. Don't try this on your mechanical machinery at home!

## CLIMATIC TESTS

### LOW AND HIGH TEMPERATURES:

The LA36 is tested in temperatures as low as  $-30^{\circ}\text{C}$  and as high as  $+65^{\circ}\text{C}$  - while in operation

### RAPID CHANGES IN TEMPERATURE:

Take the LA36. Place it in an environment of  $+100^{\circ}\text{C}$  for 60 minutes. Then move the LA36 directly into an environment of  $-30^{\circ}\text{C}$  for another 60 minutes, and repeat this cycle 100 times. Another test after which the actuator is still fully operational

### SALT SPRAY TEST:

The LA36 has undergone 500 hours of salt spray test including spraying periods and humidity storage. After this period, the LA36 proved to be fully functional

### WEATHER PROTECTION:

The LA36 is certified according to IP 66. It resists very dusty as well as very watery surroundings and it is perfect for outdoor use. Furthermore, the actuator can be washed down by a high pressure cleaner.

### CHEMICALS:

The LA36 also handles chemicals such as diesel, hydraulic oil, urea nitrogen, fertilizers, liquid lime etc.



*The LA36 is tested according to IP 66 standards. It resists both water and dust*



### ELECTRICAL TESTS

All parts of the LA36 have to work in all kinds of tough conditions – also the electrical parts of the actuator. Testing has been done within the following electrical areas:

#### POWER SUPPLY:

On top of being tested under normal voltage, the LA36 is also tested at a signal voltage of up to 40V.

- 12V DC motor: +/- 20 %
- 24V DC motor: +/- 10 %
- 36V DC motor: +/- 10 %

#### CONTROL SIGNALS:

Potentiometer and Hall effect sensor are secured for reverse polarity and short-circuits.

#### POWER AND SIGNAL CABLES:

The signal cables are strain tested up to a load of 50 kg.

#### ELECTRICAL IMMUNITY:

The LA36 is tested according to industrial standards with regards to electrical immunity. That is for both radio noise, electrical discharge (ESD) and burst

### MECHANICAL TESTS

The LA36 is designed to function in all kinds of working environments, which demands extra resilience of the actuator. The LA36 is therefore tested in the following areas:

#### VIBRATION:

The actuator withstands continuous vibration. Tests are done in 3 directions.

#### SHOCK:

Sudden shocks can be damaging to most mechanical machinery. The LA36 is shock-tested with 3 shocks of 100 G in each of 6 directions.

#### BUMP:

On top of the sudden shocks, more continuous bumps can wear down mechanical parts. The LA36 is bump tested with 500 bumps of 40 G in each of 6 directions.

The LA36 is tested according to the following standards:

Test	Specification:	Comment
Cold test	EN60068-2-1 (Ab) EN60068-2-1 (Ad)	Storage at low temperature: -40°C Operating at low temperature: -30°C
Dry heat	EN60068-2-2 (Bb) EN60068-2-2 (Bd)	Storage at high temperature: +90°C Operating at high temperature: +65°C
Change of temperature	EN60068-2-14	Rapid change in temperature: +100°C to -30°C
Damp heat	EN60068-2-30	Damp heat cyclic: Relative humidity 93 - 98 % High +55°C, low +25°C Damp heat steady: Relative humidity 93 - 95 % +40°C (+/- 2°C)
Salt spray	EN60068-2-52	Salt spray test: 500 hours incl. spraying periods + humidity storage
Degrees of protection	EN60529-IP66	IP 6X – dust: Dust-tight IP X6 – water: No ingress of water causing damage
Chemicals	BS7691/96 hours	Resistant against: diesel, hydraulic oil, ethylene glycol, urea nitrogen, liquid lime, NPK fertilizers
Free fall		Free fall from all sides: 0.4 meters on to steel
Vibration	EN60068-2-36 (Fdb)	Random vibration: Short time 6.29 g RMS (Rod Mean Square) Long time 7.21 g RMS Sinus vibration: Freq. 5 - 25 Hz, amplitude = 3.3 mm pp Freq. 25 - 200 Hz, acceleration 4 G
Bump	EN60068-2-29 (Eb)	Bump test: Level 40 G for 6 milliseconds. 3,000 bumps
Shock	EN60068-2-27 (Ea)	Shock test: Level 100 G for 6 milliseconds
HF-immunity	EN61000-6-2	Level: 60V/m. at 26 MHz – 1,000 MHz; 80% 1 KHz
Emission	EN61000-6-4	All levels are well within the norms of the emission standards
Insulation test	EN60000-1-1 §20	Level: 500 V AC/25-100 Hz

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