

Product features

- Wide range of force outputs
- Large stroke range
- Wide range of positioning times
- Constant positioning times under fluctuating loads
- Two additional force-sensitive switches possible
- Solid metal housing
- Maintenance-free gearbox
- Operates in any position

Overview

K series linear actuators are utilized to precisely adjust dampers in air-conditioning, ventilation and heating systems as well as in furnace installations, process plant engineering and other fields of industry.

They are available with the following actuating forces: 600 N, 1200 N, 1800 N, 2500 N, 3000 N, 3500 N and 5000 N. The stroke units are designed for stroke lengths of 150-750 mm. The technical construction mirrors that of series N actuators. End position limit stop is path dependent. The standard scope of supply includes a limit switch for each end position. These are designed as changeover switches and can also perform supplementary functions such as end position indication or sequential control tasks.

Additional auxiliary position switches and potentiometers are also available. Fitting a relay makes it possible to control several actuators simultaneously via a common contact. A solid cast bracket as well as an angle section made of steel attached to the housing are provided to mount the actuator. A connecting pin is included to connect the actuator with the valve.

Depending on the positioning time it is possible to supply actuators from this series that offer force-dependent switch-off functionality (optional). This switch-off function prevents damage occurring to the actuators in the event of a blockage.

HOUSING

- Housing made of die-cast zinc
- Hood made of corrosion-resistant, die-cast aluminium
- Coated with silicon-free paint
- Colour: RAL 7032 Pebble Grey
- Standard hoods powder coating
- Three cable entries M20x1.5
- Protection class IP54 to DIN EN 60529
- Options:
 - Protection class IP65 (actuator unit only)
 - Custom colours
 - Electric anti-condensate heater (helps prevent build-up of condensate in the actuator)

MOTOR

- Single-phase AC synchronous motor with permanent magnet, reversible
- 230 V \pm 10%, 50/60 Hz \pm 5%
- ON time 100% duty cycle on request
- Short start/stop times
- Insulation class B to VDE 0530
- Synchronous motors maintain speed and constant positioning times irrespective of the load
- Tropical insulation
- Options:
 - Three-phase motor
 - DC motor
 - Custom voltages
 - Custom frequencies

GEARBOX

- Spur gearing with straight-toothed steel gears
- Robust, maintenance-free
- Permanently lubricated gears
- Self-lubricating sintered bronze bearing
- Encapsulated version, operates in any position

STROKE UNIT

- Fixing bracket made of die-cast aluminium
- Spindle made of stainless steel
- Spindle self-locking
- Needle bearings to absorb axial forces
- Steel and bronze materials provide good anti-seizure properties.

ELECTRICAL CONNECTION

- Connection terminals positioned centrally close to cable entry
- Screw-type terminals
- Two free slots to retrofit additional position switches
- Additional PCB terminals ensure retrofitting systems extensions is fully unproblematic
- Infinitely adjustable control cams
- Open/close signals
- Path dependent limit switch-off
- Limit switch for each end position
- Options:
 - Additional potential-free switching contacts
 - Electronic position controller ESR-N (integrated in actuator or external)
 - Potentiometer 200 Ω ... 10 k Ω
 - Electromechanical force-sensitive switch switches off the motor in the event of a seizure

AMBIENT TEMPERATURE

- -15 °C to +60 °C
- 0 °C to +60 °C when utilizing electronic position controller ESR-N
- Options:
 - Up to +80 °C, duty cycle S3-50%
 - Down to -40 °C

ANGLE OF ROTATION LIMITED BY SNAP-ACTION POSITION OFF SWITCH

- CO switches with silver-plated contacts
- Switch connections routed to terminal strip
- Max. switching capacity: 6 A, 250 V AC
- Options:
 - Switches with gold-plated contacts
 - Switches with positive-break contacts
 - Switches designed for higher temperatures

POSITION SENSOR FOR EXTERNAL POSITION INDICATION (OPTIONAL)

- **With potentiometer**
 - Choice of wire-wound or conductive plastic potentiometer
 - Multiturn potentiometer up to 10 turns
 - Three potentiometers possible
 - It is possible to adapt the electrical angle of rotation of the potentiometer to the desired angle of rotation utilizing a gearbox.
- **With 4 ... 20 mA transmitter**
 - Utilizing a gearbox it is possible to adapt the electrical angle of rotation of the transmitter to the desired angle of rotation.

MANUAL OPERATION (OPTIONAL)

- Using the handwheel it is possible to manually adjust the position of the output shaft and valves.
- Disengaging the gearbox and motor reduces the amount of force required.
- Position switch-off settings are retained during manual operation.
- Handwheel remains motionless during electrical operation.

OPTIONS

- Other voltage/frequency
- Other ambient temperature range
- Protection class IP65 (actuator unit only)
- Handwheel
- Gearbox disengages manually
- Additional auxiliary position switches
- Custom control cams
- Electronic position controller ESR
- Position sensor
- Anti-condensate heater
- Relay
 - Pulse relay
 - Relay to switch several actuators in parallel
- Potentiometer
- Components to UL standard
- Spindle protected by bellows
- Force-sensitive switch off
- Set collars serve as external travel stops (recommended for force-sensitive switch off)

INSTALLATION

- Easily mounted thanks to stable cast angle bracket and steel angle section attached to housing
- Connecting pin supplied to connect spindle with valve
- Straightforward connection to valve stem by means of:
 - Lever arm, clamping lever, ball-and-socket joint, connecting rods, spring-loaded connecting rods

ORDER DETAILS

- Device type
- Positioning force
- Positioning time
- Operating voltage /frequency
- Desired options
- When ordering a potentiometer:
 - Resistance value
 - Desired linear regulating distance
- Information to preset position switches and potentiometers
- Or order number
- Desired valve, where applicable

ACTUATORS K SERIES, 230 V, 50(60) Hz (OPTIONAL: 115 V, 50(60) Hz AND 24 V, 50(60) Hz)

Type	Positioning time	Positioning force	Power consumption (max.)	Selectable regulating distance	Hood height	Weight	Order No.	Order No. Stroke unit
K ..06	1.7(2) mm/s	600 N	18 VA	150 - 750 mm	28 mm+120 mm	3.7 kg	112940	See below
K ..06	2.3(2.7) mm/s	600 N	23 VA	150 - 750 mm	28 mm+120 mm	3.8 kg	112950	See below
K ..06	4.5(5.4) mm/s	600 N	32 VA	150 - 750 mm	28 mm+120 mm	4.6 kg	112960	See below
K ..06	6.7(8) mm/s	600 N	35 VA	150 - 750 mm	28 mm+120 mm	4.6 kg	112970	See below
K ..12	1.7(2) mm/s	1200 N	31 VA	150 - 750 mm	28 mm+120 mm	3.8 kg	112990	See below
K ..12	2.3(2.7) mm/s	1200 N	24 VA	150 - 750 mm	28 mm+120 mm	4.0 kg	113000	See below
K ..12	4.5(5.4) mm/s	1200 N	69 VA	150 - 750 mm	176 mm	5.6 kg	113010	See below
K ..12	6.7(8) mm/s	1200 N	47 VA	150 - 750 mm	176 mm	5.6 kg	113020	See below
K ..18	1.5(1.8) mm/s	1800 N	24 VA	150 - 750 mm	28 mm+120 mm	4.0 kg	113040	See below
K ..18	2.3(2.7) mm/s	1800 N	24 VA	150 - 750 mm	28 mm+120 mm	4.0 kg	113050	See below
K ..25	1.5(1.8) mm/s	2500 N	32 VA	150 - 750 mm	28 mm+120 mm	4.6 kg	113060	See below
K ..25	2.3(2.7) mm/s	2500 N	35 VA	150 - 750 mm	28 mm+120 mm	4.6 kg	113070	See below
K ..35	1.5(1.8) mm/s	3500 N	69 VA	150 - 750 mm	176 mm	5.6 kg	113090	See below
K ..30	2.3(2.7) mm/s	3000 N	47 VA	150 - 750 mm	176 mm	5.6 kg	113100	See below
K ..50	1.3(1.5) mm/s	5000 N	47 VA	150 - 750 mm	176 mm	5.6 kg	113110	See below

Stroke units for regulating distance 150 mm

5.3 kg

113340

Stroke units for regulating distance 300 mm

7.6 kg

113350

Stroke units for regulating distance 450 mm

9.6 kg

113360

Stroke units for regulating distance 600 mm

11.6 kg

113370

Stroke units for regulating distance 750 mm

13.6 kg

113380

The actuator designation K 1506 is created from the regulating distance (150 mm) = 15 and positioning force (600 N) = 06

ACTUATORS K DC SERIES, 24 V, DC

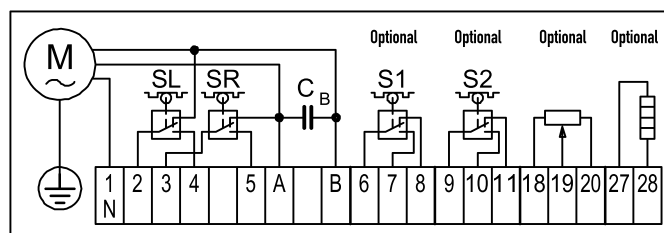


Type	Positioning time	Positioning force	Power consumption (max.)	Selectable regulating distance	Hood height	Weight	Order No.	Order No. Stroke unit
K ..06-DC	1.7 mm/s	600 N	11 W	150 - 750 mm	28 mm+120 mm	3.6 kg	113180	See below
K ..06-DC	3.4 mm/s	600 N	21 W	150 - 750 mm	28 mm+120 mm	3.8 kg	113190	See below
K ..06-DC	6 mm/s	600 N	21 W	150 - 750 mm	28 mm+120 mm	3.8 kg	113200	See below
K ..12-DC	1.7 mm/s	1200 N	21 W	150 - 750 mm	28 mm+120 mm	3.8 kg	113220	See below
K ..12-DC	3.4 mm/s	1200 N	21 W	150 - 750 mm	28 mm+120 mm	3.8 kg	113230	See below
K ..12-DC	6 mm/s	1200 N	38 W	150 - 750 mm	28 mm+148 mm	5.1 kg	113240	See below
K ..25-DC	1.7 mm/s	2500 N	38 W	150 - 750 mm	28 mm+148 mm	5.1 kg	113260	See below
K ..25-DC	3.4 mm/s	2500 N	38 W	150 - 750 mm	176 mm	5.1 kg	113270	See below
K ..50-DC	1.7 mm/s	5000 N	38 W	150 - 750 mm	28 mm+148 mm	5.1 kg	113280	See below

Stroke units for regulating distance 150 mm	5.3 kg	113340
Stroke units for regulating distance 300 mm	7.6 kg	113350
Stroke units for regulating distance 450 mm	9.6 kg	113360
Stroke units for regulating distance 600 mm	11.6 kg	113370
Stroke units for regulating distance 750 mm	13.6 kg	113380

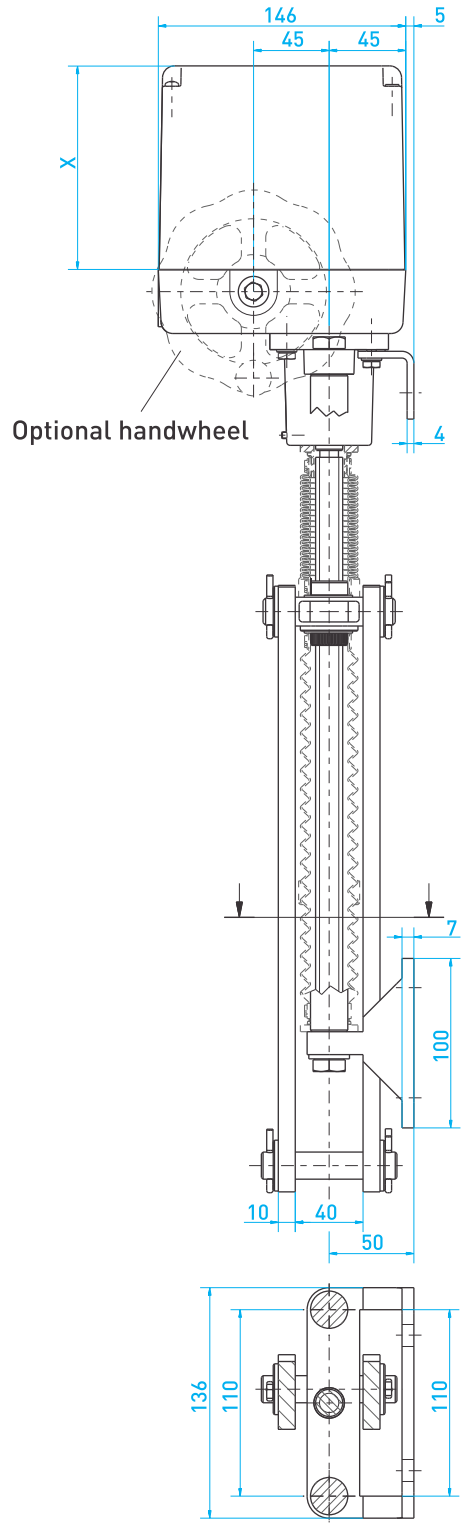
The actuator designation K 1506-DC is created from the regulating distance (150 mm) = 15 and positioning force (600 N) = 06

SCHEMATIC DIAGRAM STANDARD AC



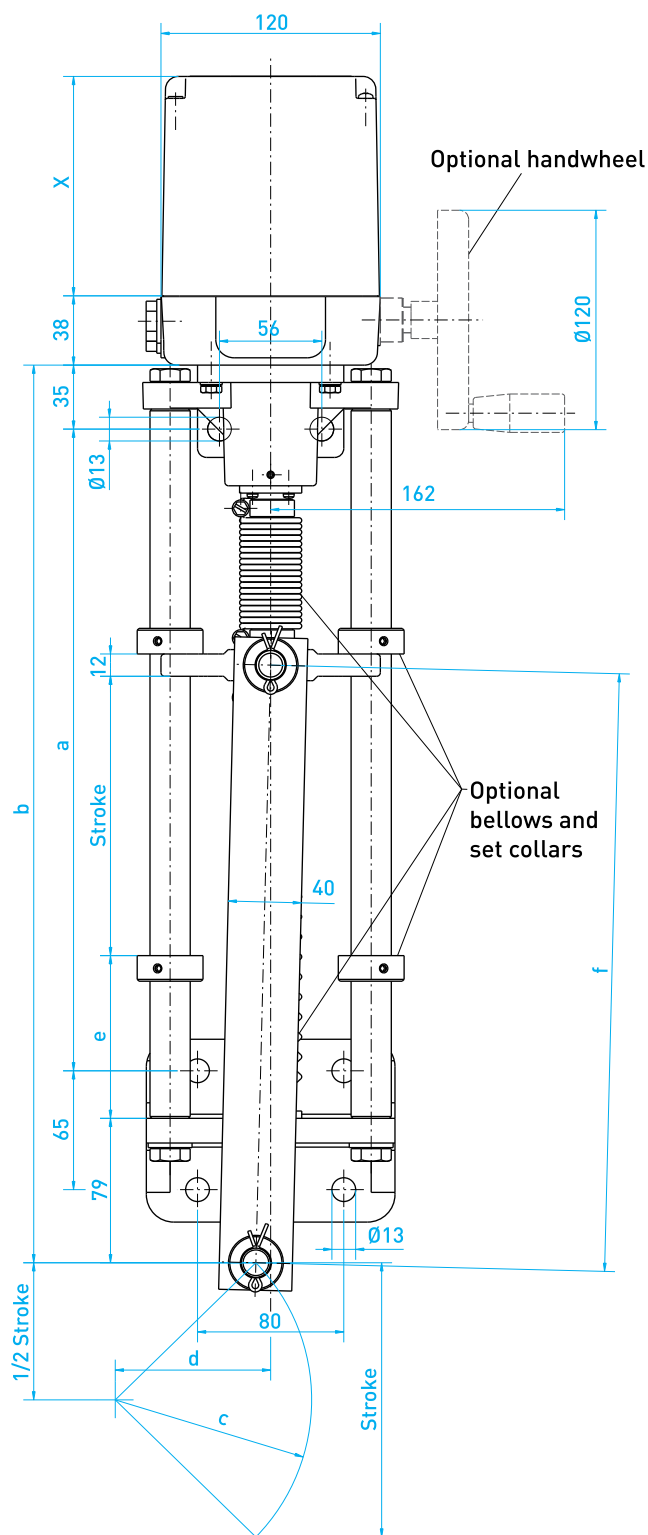


Dimensions



LINEAR ACTUATORS K

Power	X
6 - 31 VA	120
32 - 40 VA	148
> 40 VA	176



LINEAR ACTUATORS K

Type	Stroke	a	b	c	d	e	f
K	150	201	341	106	85	-	252
K + bellows	150	351	491	106	85	89	327
K	300	351	491	212	170	-	402
K + bellows	300	611	751	212	170	144	532
K	450	501	641	-	-	-	552
K	600	651	791	-	-	-	702
K	750	801	941	-	-	-	852

All dimensions in mm