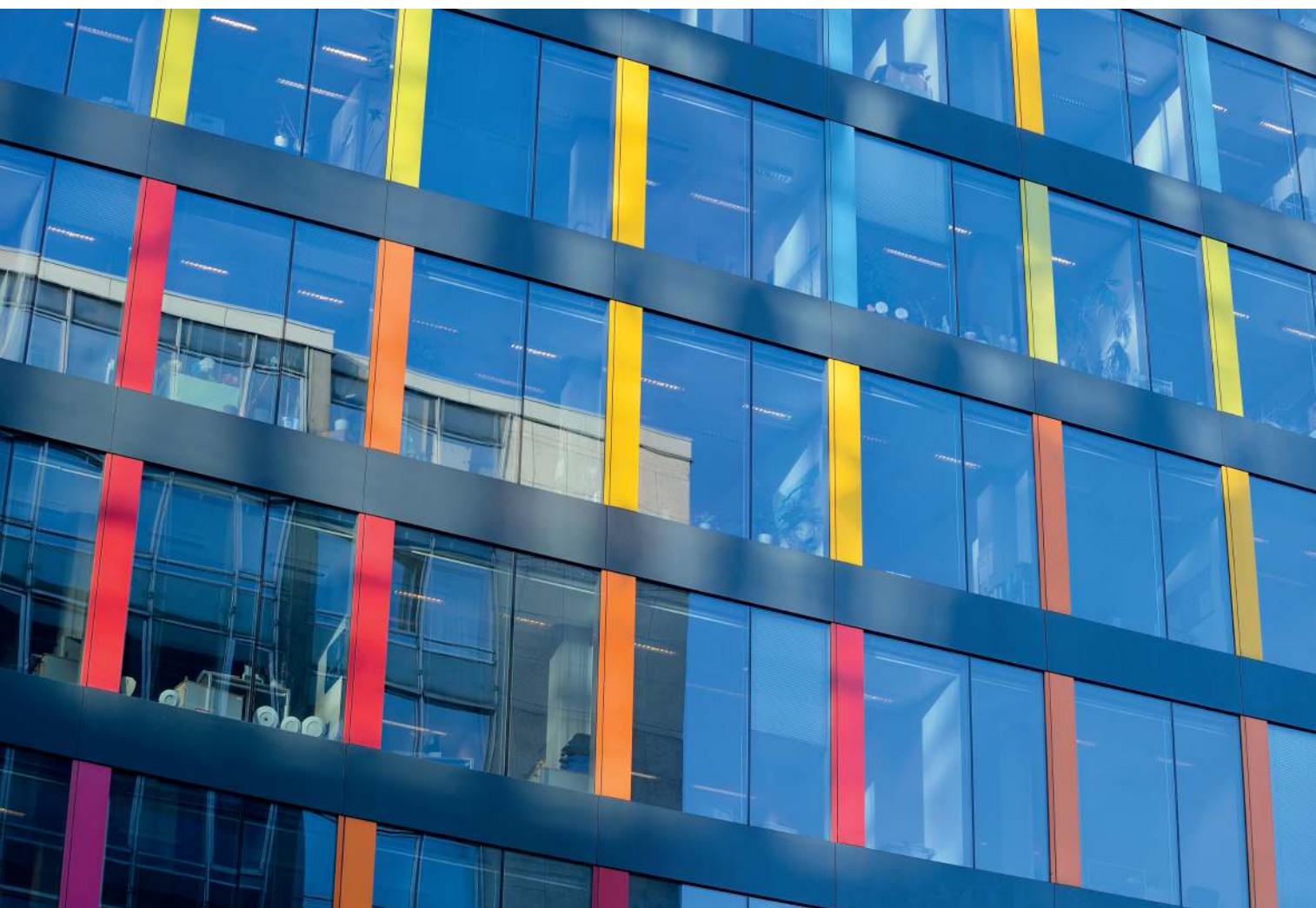


# Product Catalogue 2021

Window Automation

Ventilation Systems - Smoke and Heat Extraction (SHEV)



nekos



Nekos was established in the early 2000s and in just a few years, with intense design and development activities and new products, it reached a leading position in the technological innovation of door and window automation systems; this pre-eminence was soon also recognised on the international market. The company dedicates great efforts to Research and Development, combining technological innovation and design through the expansion of its knowledge base and constant updating with the most modern technologies available, to produce innovation not only in automations but also in door and window construction techniques.

Nekos is the only company in the sector dedicated exclusively to automation systems for doors and windows, which has become its "core business": this is why Nekos, a sector specialist, always manages to meet particular and specific market needs, relying on skills acquired over time, introducing innovative ideas and new patents, and guaranteeing the important requirement of reliability and product quality.

Awareness of the need for a constant updating process provides an almost obsessive motivation to seek new solutions and to simplify and improve the work of installers and users, with attention also given to the environment.

Production is a promise of quality that accompanies each phase of processing, in the choice of raw materials, manufacturing methods and careful control. Sensitivity to the particular and changing needs of the market finds concrete expression in the industrial operations, which produce innovation, technology, design, quality and reliability.

All the products conform to the required regulations and are subjected to objective quality testing by various certification bodies.



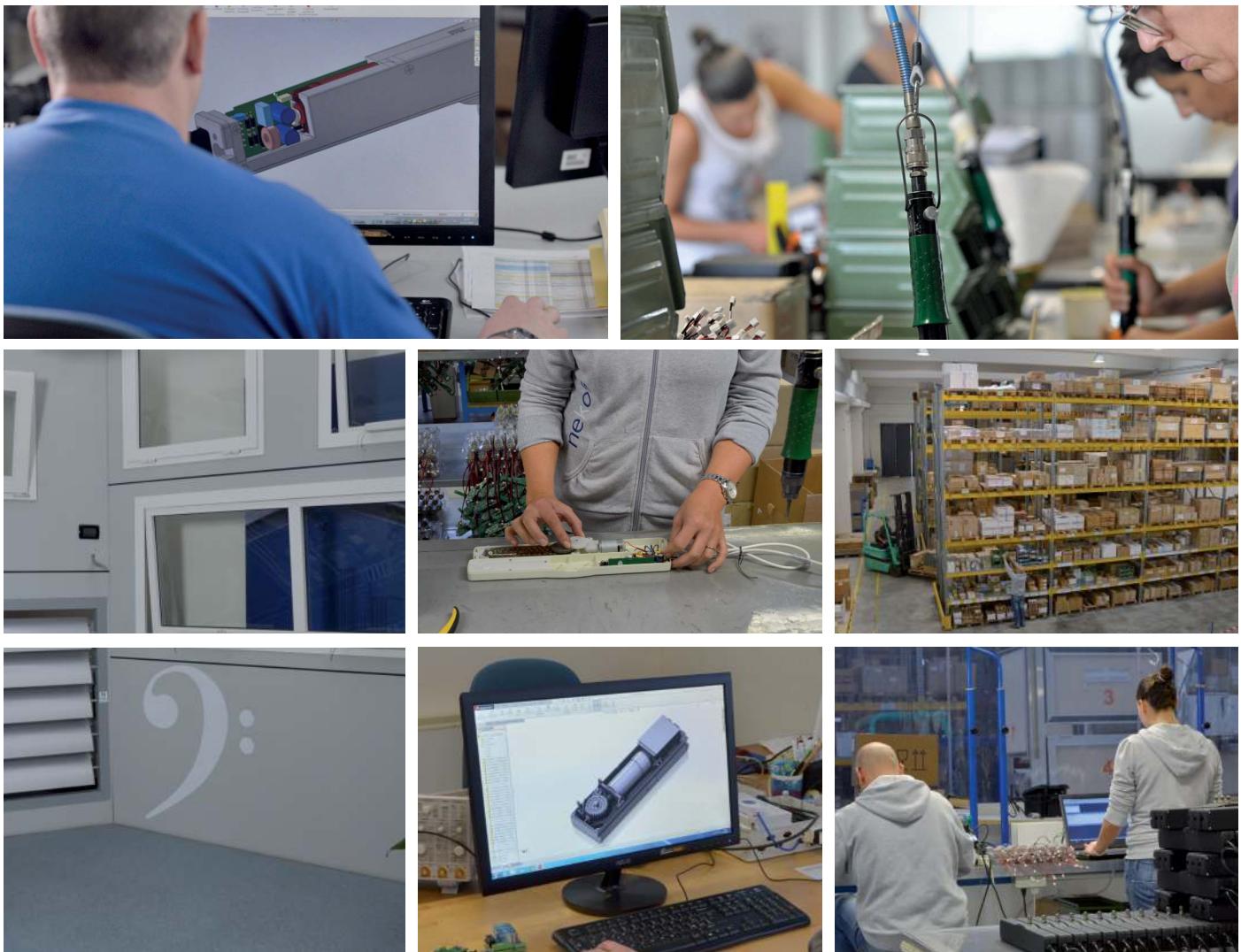
SYSTEMS FOR NATURAL  
VENTILATION  
OF ROOMS



SYSTEMS FOR  
SMOKE AND HEAT  
EXTRACTION



ACCESSORIES AND MACHINES  
FOR AUTOMATION OF WINDOWS,  
DOORS, CURTAINS...



## PREFACE

CHOOSE YOURS	page 6
NATURAL VENTILATION AND SMOKE AND HEAT EXTRACTION	page 10

## CHAIN ACTUATORS

KIMO 202	page 14
KIMO	page 16
KATO 253	page 18
KATO	page 20
KATO SYNCRO <sup>3</sup>	page 21
KATO ADV RADIO	page 22
KATO 305	page 24
KATO 305 SYNCRO <sup>3</sup>	page 26
INKA 356	page 28
INKA 356 SYNCRO <sup>3</sup>	page 29

## ELECTROMECHANICAL LOCKS

K-LOCK	page 32
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## LINEAR ACTUATORS

K-DARK	page 36
ROCK	page 38
SKY 450	page 40
SKYRO 650	page 42
SKYRO 650 SYNCRO <sup>3</sup>	page 43

## SMOKE AND HEAT EXTRACTION SYSTEMS (EFC-SHEV)

FV-3 & FV-6	page 46
SHEV ACCESSORIES	page 47
PA-L	page 48
PA-L/S	page 49
PA-KL <sup>2</sup>	page 50
PA-KL <sup>2</sup> -DF	page 51

## GEARMOTORS

FLIK	page 54
MR28-B	page 56

## CENTRAL UNITS

SERIE K	page 60
MODIX	page 62

## ACCESSORIES

AUX	page 66
RR2-M	page 68
KOUPLE	page 69
ALI'SW	page 70
PIK	page 71
EVO	page 72
RAIN102H	page 73
NRS1	page 74
V'1 & V'LUX	page 75
GRAD°	page 76

## BRACKETS

BRACKETS	page 78
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# Choose your actuator

Window frames come in various types, sizes and weights. Some are installed where atmospheric agents such as wind and snow may play an important role in the determination of the forces required to move them.

This is why there are different families of automations that differ basically in their actuation system. The actuators can be **Chain, Rack or Rod actuators**.

Sometimes the frames must be moved automatically for practicality or security reasons, using electronic control devices such as control units for detection of atmospheric events or smoke and heat exhaust ventilation systems.

Before installing an actuator on the frame, it is necessary to check that the actuator is suited for the work to be carried out and, especially, that it has the desired performance characteristics.

## FORMULAS TO CALCULATE THE PUSH OR PULL FORCE REQUIRED TO OPEN A WINDOW

In order to determine the correct type of automation to be installed, it is essential to know the force required in order to move the frame.

A preliminary check can be made using the formulas provided below which, however, do not take into consideration the action of external agents on the frame such as friction, air currents, depressions, snow and wind.

**F** = Force required to open and close - kg

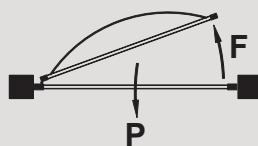
**P** = Window weight (only movable part) - kg

**C** = Window opening stroke (actuator stroke) - cm

**H** = Window height - cm

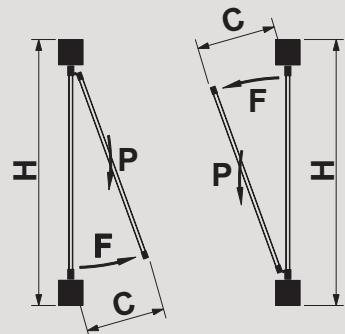
1 N (Newton) = 0,102 kg

1 kg = 9,81 N



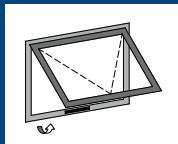
For horizontal domes and dormer windows

$$F = 0,54 \times P$$

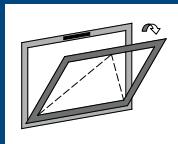


For outward opening or transom window

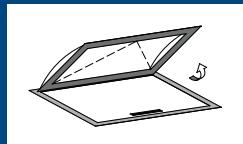
$$F = (0,54 \times P) \times (C:H)$$



**AWNING WINDOW**  
hinges in the top side, outside opening, actuator mounted inside in the bottom.



**HOPPER WINDOW**  
hinges in the bottom side, inside opening, actuator mounted inside in the top.



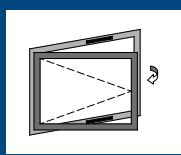
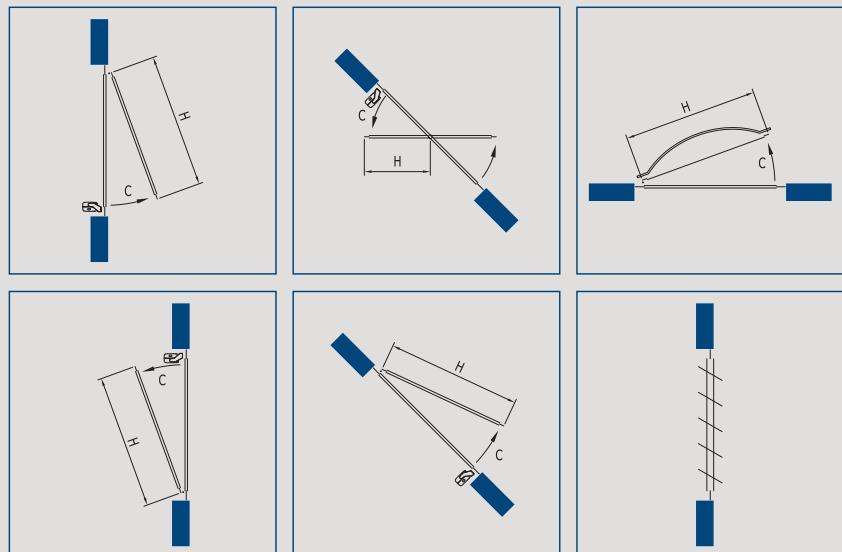
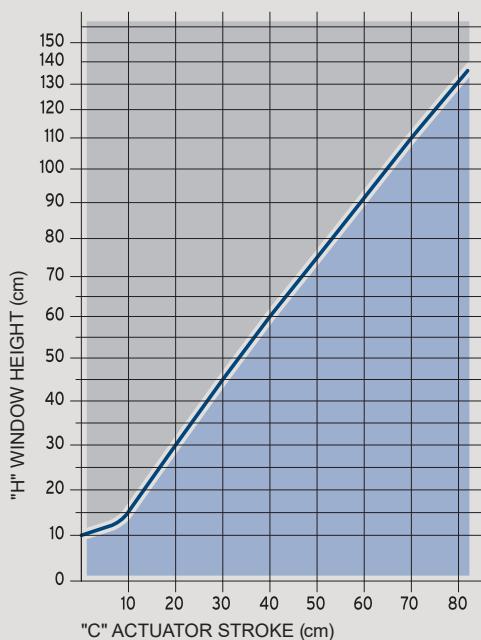
**ROOF WINDOW**  
hinges in a side, opposite outside opening, actuator mounted inside.

**DOMES AND SKYLIGHTS**  
hinges in a side, opposite outside opening, actuator mounted inside.

## DETERMINING THE ACTUATOR STROKE

The actuator stroke can be determined by considering the type of application. For linear actuators (rack and rod actuators) the user must consider the rotation and overall volume that the actuator occupies in the front compartment of the window; it is recommended that a technical check be carried out before installation.

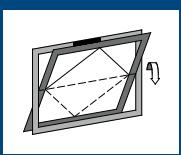
For determining the maximum stroke that can be selected, refer to the chart below which indicates the maximum stroke attainable and/or settable considering the type and dimensions of the frame, its opening direction, and the need to ensure that no damage to the actuator or frame itself occurs during the movement.



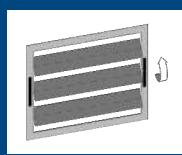
CASEMENT WINDOW  
hinges in a vertical side, inside  
opening, actuator mounted  
inside.



SLIDING WINDOW / DOOR  
sliding, parallel to fix part.



CENTER PIVOT WINDOW  
hinges in medium side  
position, 1/2 opening outwards  
1/2 inwards, actuator mounted  
inside as outward or hopper.



LOUVERS WINDOW  
rotation of louvers in  
medium side position,  
opening with a control lever.

# Information on safety

## SAFETY IN MOTORISED WINDOWS AND IN SMOKE AND HEAT EXTRACTION SYSTEMS

### The Machinery Directive and other applicable European Directives and Standards.

All the devices produced by Nekos and included in this catalogue are designed to open and close windows installed in domestic, commercial and industrial environments and to be used for both natural room ventilation and in the design of natural smoke and heat extraction systems for fire prevention.

Nekos actuators are designed and built to meet requirements for safety and the protection of persons and property, complying - where relevant - to the following European Directives and Standards:

- 1) 2006/42/EU - Machinery Directive,
- 2) 2014/35/EU - Low Voltage Directive (LVD),
- 3) 2014/30/EU - Electromagnetic Compatibility Directive,
- 4) 2014/53/EU - Radio Equipment Directive,
- 5) 2011/65/EU - Directive on the restriction of use of certain hazardous substances in electrical and electronic equipment (RoHS Directive),
- 6) STANDARD EN 60335-2-103 - Household and similar electrical appliances - Safety - Particular requirements for drives for gates, doors and windows,
- 7) STANDARD EN 12101-2 Smoke and heat control systems – natural smoke and heat exhaust ventilators.

## BASIC CONCEPTS OF THE MACHINERY DIRECTIVE

According to the machinery directive, when a window or door is equipped with an actuator (electric, pneumatic or mechanical), it becomes a machine, which is defined as "an assembly, fitted with or intended to be fitted with a drive system other than directly applied human or animal effort, consisting of linked parts or components, at least one of which moves, and which are joined together for a specific application".

According to this directive, the manufacturer of the machine (natural or legal person), namely the person who places a "machine" on the market or in service, is responsible for its design, construction and compliance with the relevant standards. In specific cases, anyone who purchases an actuator, installs it on a window and places it in service (whether a builder, window manufacturer, design engineer, fitter, mechanical installer, electrician or even a private individual) is considered the manufacturer of the "window-machine". The manufacturer must therefore:

- A. ensure that a risk assessment is made to establish the safety requirements for the machine, which must then be designed and built based on the results of the risk assessment;
- B. make sure that the machine meets the "essential safety and health protection requirements" before it is placed on the market;
- C. provide a technical data sheet, which must be set out as required by the standard;
- D. provide all necessary information, including instructions for use, installation and maintenance;
- E. carry out the conformity assessment procedures and draft the EC Declaration of Conformity;
- F. place CE marking on the window/machine.

Other certifications:



CE Marking and Conformity



UKCA Certification

## CLASSIFICATION OF A PARTLY-COMPLETED MACHINE

The Machinery Directive regulates the field for "partly completed machinery", defined as "an assembly which is almost machinery but which cannot in itself perform a specific application": a drive system is "partly completed machinery". Electric actuators for windows fall exactly into this category and are therefore "partly completed machinery", intended to be incorporated into a machine, namely a motorised window. The manufacturer of a partly completed machine must prepare relevant technical documentation and assembly instructions. It must also prepare and provide a Declaration of Incorporation, which will then be included in the machine technical file drafted by the manufacturer of the complete machine (e.g. the window). All electric actuators come under the standards mentioned above under points 2), 3), 4), 5).

According to these directives, the manufacturer must design and build the devices in conformity with the essential safety requirements for the risks covered by the standards, draft an EC Declaration of Conformity and place a label on the devices displaying all the required information (technical data) and the Mark.

Actuators for use in Smoke and Heat Extraction systems (abbreviated as SHEV, from the German Rauch und Wärme Abzug o SHEV), as well as centralised control units, come under standard EN 12101-2 (point 7). Both the control units and the actuators must be tested within the window system - never alone - and are certified for use in the event of fire. The actuators are also tested under system loads in severe conditions, such as heat, wind, snow and low temperatures.

In conclusion, Nekos marks all their actuators with the CE mark and includes the EC Declaration of Conformity in its instruction booklets. It also provides the Declaration of Incorporation (on request from the sales department or as a download from the website), thereby complying with the provisions of the Machinery Directive and standard 60335-2-103.

For the SHEV models, certifications are available for the respective complete Smoke and Heat Evacuation systems.

## RISK ANALYSIS AND INSTALLATION CHOICES FOR MOTORISED WINDOWS

Throughout the entire process of design and production of its devices, Nekos, as manufacturer, pays close attention to the risk analysis required by the regulations. However, it cannot be held responsible for risks deriving from the final application of its products in the machine assembly, i.e. the window.

These risks must be assessed by the "manufacturer" through meticulous safety analysis, both during construction of the window and during installation and daily use, to identify and minimise any residual risks.

The risk analysis and protection measures are subject to national variations, depending on the local regulations in force. If these are lacking, for Europe, follow the indications of standard EN 60335-2-103.

This standard states that in certain situations (e.g. actuator H installation > 2.5 m), the risk analysis is not necessary because it is already in a safe situation. In other situations (e.g. H < 2.5 m), the standard itself indicates the safety measures to be taken to eliminate the risk (for complete information, see the text of the standard).

Nekos has always had the important task of building products that are safe and comply with the regulations issued by the certification bodies. For its certifications, it relies on bodies and institutes of proven capacity and recognised at a worldwide level.

Nekos works with the following institutions and bodies for the certification of its products:



SHEV Certification



UL Certification



Measurement and product certification center

# Natural Ventilation

## LET'S TALK ABOUT NATURAL VENTILATION (NRWG)

Most of us spend our daily lives indoors: it is essential that the air quality is healthy, clean and fresh so that we can carry out our daily activities while safeguarding our physical well-being.

For healthy living, the air in the room should be changed several times a day.

There are various systems for air exchange in rooms: the simplest and cheapest, which is available to everyone, is the natural one: you open a window on one side and let out the stale air on the other.

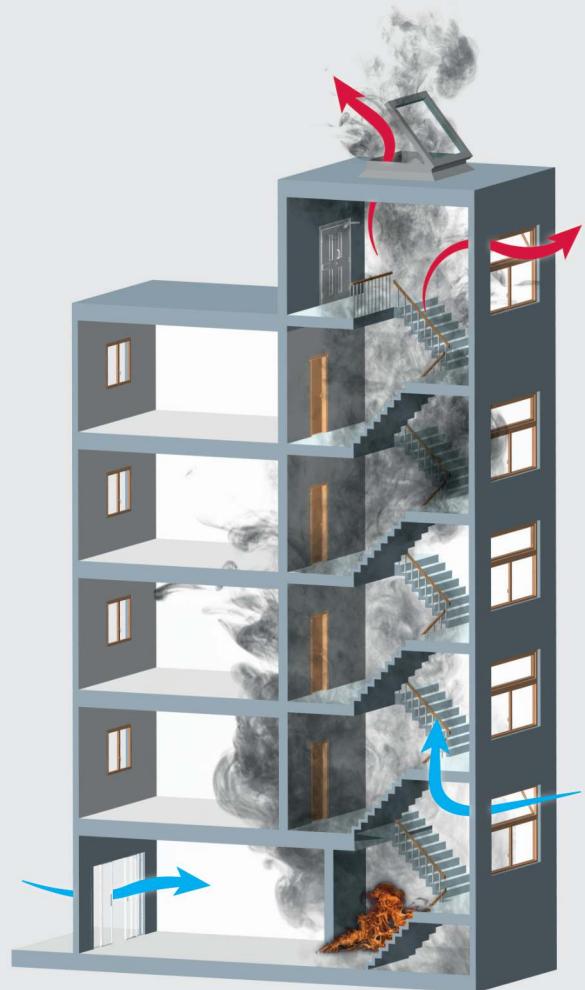
At Nekos, we have been engaged for some time in the development and construction of door and window automation processes designing and building devices and control units capable of autonomously ensuring the natural ventilation of rooms.

To our actuators, which are machines that physically open and close windows, we have added a series of intelligent control units, to combine the entire natural ventilation process in one system.

Also for smoke and heat extraction systems, there are various types of products capable of naturally expelling fumes and harmful gases completely autonomously and in compliance with current regulations.

In the event of a fire in a room, it is important to know the escape routes clearly and immediately, as these are essential for survival.

These points, further examined more specifically in the chapter about control units for heat and smoke extraction, are intended, to illustrate how controlled room ventilation can be implemented and how to ensure clean air and the expulsion of smoke and harmful gases when necessary.



Browsing through this catalogue, you will often come across abbreviations (e.g. SHEV, NRWG, etc.), which are a legacy of the German nomenclature used for natural ventilation techniques.



# Smoke and Heat Extraction

## SMOKE AND HEAT EXTRACTION SYSTEMS (SHEV)

Smoke and heat extraction systems are a fundamental component of fire prevention.

The chosen system must be suitable for the structure and construction of the building and must provide the best solution to save human lives and property. In any application, in the event of fire, the maximum reliability of the smoke and gas extraction system is fundamental; the SHEV system presented in this catalogue offers the desired safety.

The essential operating concept of a fire prevention system consists in preventing smoke from remaining in enclosed spaces and entering escape routes and areas for the survival of people.

The safety system must be automatically activated to open all the windows from which the smoke and gases can be expelled, thereby freeing the escape routes to areas with clean, fresh air.



During normal daily life, the same system ensures a controlled supply of fresh air in the rooms, to improve the living environment and people's health, with no need to install any other system.

It should not be forgotten that the system produces economies of management, with a single system serving various different purposes, but above all, the natural ventilation of the rooms can be used without having to rely on forced air conditioning systems, with all the advantage of a better quality of life.

## NATURAL SMOKE AND HEAT VENTILATION DEVICES (NRWG) IN ACCORDANCE WITH EUROPEAN STANDARD EN 12101-2

All heat and smoke evacuation devices must be manufactured in accordance with standard EN 12101-2. The specific certification (NRWG) establishes testing systems for the devices that make up the system, such as the window, the automation, the detector devices and the control units.

The construction materials are also subject to this certification. According to the above standard EN 12101-2, building products B part 1, they must be tested and certified for use in buildings. The product catalogue includes motors, fixing materials, window profiles, glass, window fixtures (scissor hinges, sash hinges, etc.), seals, etc.

The construction and distribution of extraction systems should be studied in relation to the structure of the building, which can include vents in vertical walls, on the roof, in forced ducting, etc. Numerous manufacturers have introduced various solutions on the market, however the systems must be verified by the notified inspection authorities. If the test results are positive, the producers receive a classification report and can place their products on the market. The automation and control systems presented on the following pages have obtained certifications that guarantee maximum reliability of operation in the event of fire.

## WHY SMOKE AND HEAT EXTRACTION IS SO IMPORTANT

When a fire occurs, smoke and toxic gases put people's lives in danger. Statistics confirm that almost all cases of death in building fires are caused by poisoning from inhaling smoke and toxic gas rather than by the rapid rise in temperature. The spread of smoke inside the rooms causes considerable material damage to structures and equipment.

Lowering the temperature or delaying its increase preserves the stability of the buildings and facilitates fire-fighting, by creating visibility in the areas of access and delaying the lateral spread of the fire.

Nekos produces electrical actuators and systems for opening windows and ventilation outlets in the event of fire. The use of an integrated SMOKE AND HEAT EXTRACTION system (SHEV) linked to the actuators is aimed at protecting people, ensuring their maximum survival, and facilitating the extraction of hot air and smoke from the premises. Creating a smoke-free zone at lower levels near the floor, freeing up stairwells and corridors, and lessening the concentration of toxic gases improves visibility in the escape routes for people and facilitates access for the emergency services. For this purpose, the actuators have been designed and tested for use with integrated systems and with windows for smoke and heat extraction, in accordance with European standard EN12101-2.

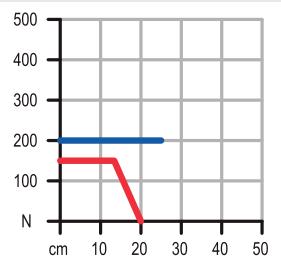
# CHAIN ACTUATORS



# KIMO 202 | Chain actuator 200N

A flush-mounted electric chain actuator for top hung outward opening windows, bottom hung inward opening windows and for pivoting frame windows. KIMO 202 is Nekos's answer to demands for concealed installations inside window frames with ever smaller profiles.

- KIMO 202 Actuator has very small dimensions (21×28,5x354 mm), is supplied in 3 colour variants (white, black and grey) and has a sturdy structure made of high strength composite material. These features allow it to be extremely versatile and be used both in concealed and visible applications.
- Extremely Silent (40 dB(A)), equipped with a patented 3-link chain and provided with three opening strokes, which are immediately and easily selectable through dip-switch.
- The actuator is already integrated with implemented synchronization (Syncro<sup>3</sup> - Patent) which enables him to operate both alone and in systems up to eight actuators without any control unit.
- Combined with the K-LOCK and the perimeter fittings, it provides a burglar-proof window lock. KIMO 202 can be also connected to AUX, which is a complementing accessory for natural ventilation systems using motors operating at 24V DC.
- Actuator special version, UL/CSA certified.



**PATENTED**

EP1723303 - EP2574823  
EP2770385



## APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
CENTER PIVOT WINDOW

## TO BE USED WITH:

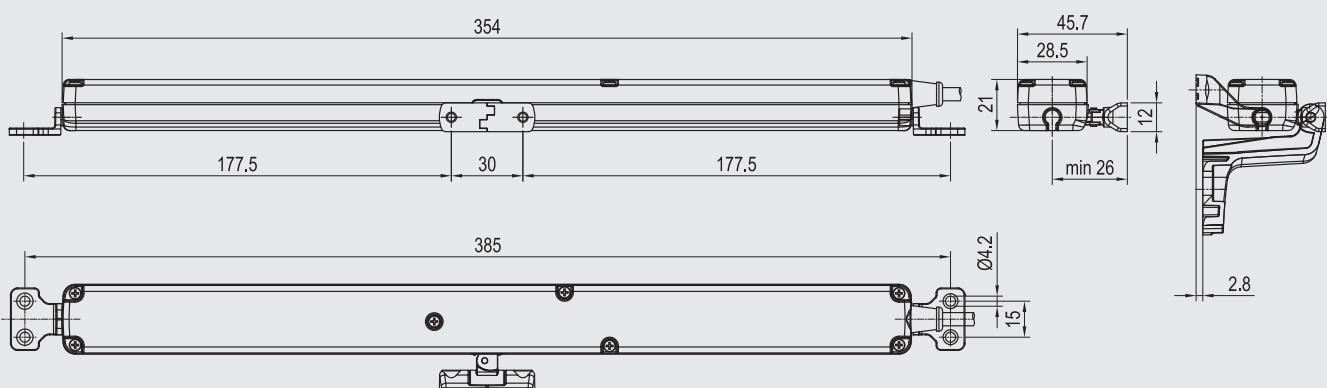
K-LOCK  
SERIE KL and SERIE KL-R  
MODIX 2/4/6  
AUX  
ALI'SW



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Electric actuator with a three-link articulated chain (Nekos Patent), enclosed in a housing made of high-strength composite material with glass fibre, suitable for opening and closing awning and hopper windows.
- Operates at low voltage (24V DC).
- Nekos patented chain. Progressive starting ramp. Power control over the entire stroke.
- Three selectable opening strokes by dip-switch: 100, 170 and 250 mm.
- Stroke-end at closing with power absorption and with protection against overload.
- Relax function, with relaxation of mechanical parts after each stop by power absorption.
- Supplied complete with pivoting support brackets for concealed installation and sash connection bracket. Flush-mounted window brackets allow the motor to be inspected, even if the window is closed or during a power outage.
- Standard Colours: Black (similar to RAL9005) with Black power cable, White (similar to RAL9010) and Grey (similar to RAL9006) with White cable.
- Complies with EU directives (EMC Directive, Low Voltage Directive) and UL/CSA certified.

<b>MODEL</b>		<b>KIMO 202 - 24V</b>		
Thrust force		200N (100 mm), 100N (170 mm), 60N (250 mm)	Protection index for electrical devices	IP42
Traction force		200 N	Soft Stop	NO
Strokes		100, 170, 250 mm	Relax function	YES
Syncro <sup>3</sup> synchronization		YES (max 8)	Adjustment of connection to window frame	At absorption of power
Power supply voltage		24V DC	Connection in parallel	YES (max. 20)
Rated absorbed current		0,45 A	Length of power cable	2 m
Power absorbed at nominal load		10,8 W	Stroke-end at opening	Electronic by dip-switch
Load speed		4 mm/s	Stroke-end at closing	At absorption of power
Duration of load stroke		63 s	Protection against overload	At absorption of power
Electrical insulation		Class III	Holding nominal force	1000 N
Type of service		5 cycles	Dimensions	21x28,5x354 mm
Working temperature		-20°C - +70°C	Weight	0,45 Kg



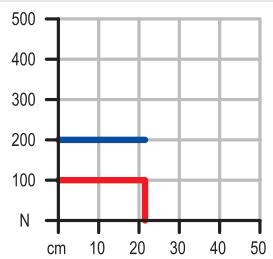
CODE	MODEL
6050551	Actuator KIMO 202 Syncro <sup>3</sup> 24V black
6050552	Actuator KIMO 202 Syncro <sup>3</sup> 24V white
6050553	Actuator KIMO 202 Syncro <sup>3</sup> 24V grey

# KIMO

## Chain actuator 200N

A flush-mounted electric chain actuator for awning windows, hopper windows and dormers. KIMO is a latest generation actuator equipped with a microprocessor that can be combined with a building automation system. It includes the following features:

- A progressive starting ramp and power control over the entire stroke.
- Intuitive and immediate stroke selection with dip-switches.
- Relax function, with release of tension on mechanical parts after each stroke-end generated by a mechanical lock.
- Nekos patented chain.
- Flush-mounted window brackets that allow the motor to be inspected, even during a power outage or product failure.
- Intelligent, compact and robust (built entirely of metal), it is the smallest commercially available window actuator. Combined with the BK-LOCK and the perimeter fittings, it provides a burglar-proof window lock. Can be flush mounted in any European groove profile. It fixes to the frame with two brackets. Extremely quiet (42 dBA) and sturdy, with compact dimensions.



**PATENTED**

EP2574823



### APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
CENTER PIVOT WINDOW

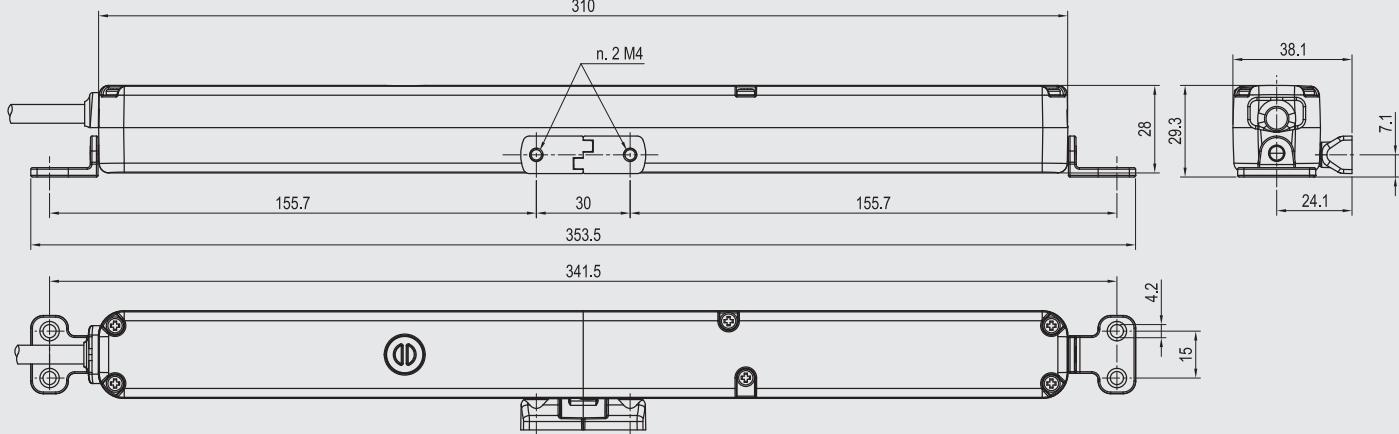
### TO BE USED WITH:

BK-LOCK  
SERIE KL and SERIE KL-R  
MODIX 2/4/6  
ALI'SW



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Electric actuator with a three-link articulated chain (Nekos patent), enclosed in a sturdy metal housing, suitable for opening and closing awning and hopper windows.
- Traction power 200 N, thrust 100 N, operates only at Safety ELV (SELV) voltage (24V DC).
- Opening stroke-end can be adjusted at any time by selecting the dip-switches, closing stroke-end with power absorption as protection against overload.
- Can be connected in parallel.
- Supplied complete with screw-less pivoting support brackets and a universal coupling bracket for awning and hopper windows.
- Comes in only one colour: Grey (RAL9006) with PVC white cable.
- Complies with EU directives (EMC Directive, Low Voltage Directive).



MODEL	KIMO - 24V
Thrust force	100 N
Traction force	200 N
Strokes	70, 125, 170, 210 mm
Syncro <sup>3</sup> synchronization	NO
Power supply voltage	24V DC
Rated absorbed current	0,36 A
Power absorbed at nominal load	8,6 W
Load speed	5,5 mm/s
Duration of load stroke	38 s
Electrical insulation	Class III
Type of service	5 cycles
Working temperature	-5°C - +65°C
Protection index for electrical devices	IP32

Soft Stop	NO
Relax function	YES
Adjustment of connection to window frame	At absorption of power
Connection in parallel	YES (max. 20)
Length of power cable	2 m
Stroke-end at opening	Electronic by dip-switch
Stroke-end at closing	At absorption of power
Protection against overload	At absorption of power
Holding nominal force ( <i>it can vary according to the chosen brackets</i> )	1700 N
Dimensions	29x29x310 mm
Weight	0,78 Kg

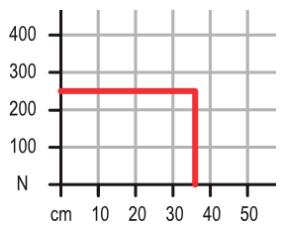
CODE	MODEL
6050072	Actuator KIMO 24V – max. stroke 210 mm

# KATO 253 | Chain actuator 250N

A chain actuator for awning windows, hopper windows, flat roof domes and dormers. KATO 253 is an ingenious evolution developed by Nekos to cater to market demands. Small, smart and affordable! Simple mechanical selection of two different strokes: 240 mm and 360 mm. Equipped with a microprocessor with the following functions:

- Progressive power ramp.
- Power control over the entire stroke.
- Simple and immediate stroke selection.
- Relax function for releasing tension in mechanical parts after each stroke end
- Accessories compatible with the entire KATO series.

It has compact dimensions; the body and brackets are made from high-strength composite material (glass fibre-reinforced polyamide). This actuator adopts the same patents as the chain actuators produced with Nekos technology, both for the quick coupling actuator support and for the window fixings.



**PATENTED**  
EP1723303 - EP1723304B1



## APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
DOMES and SKYLIGHTS  
CENTER PIVOT WINDOW

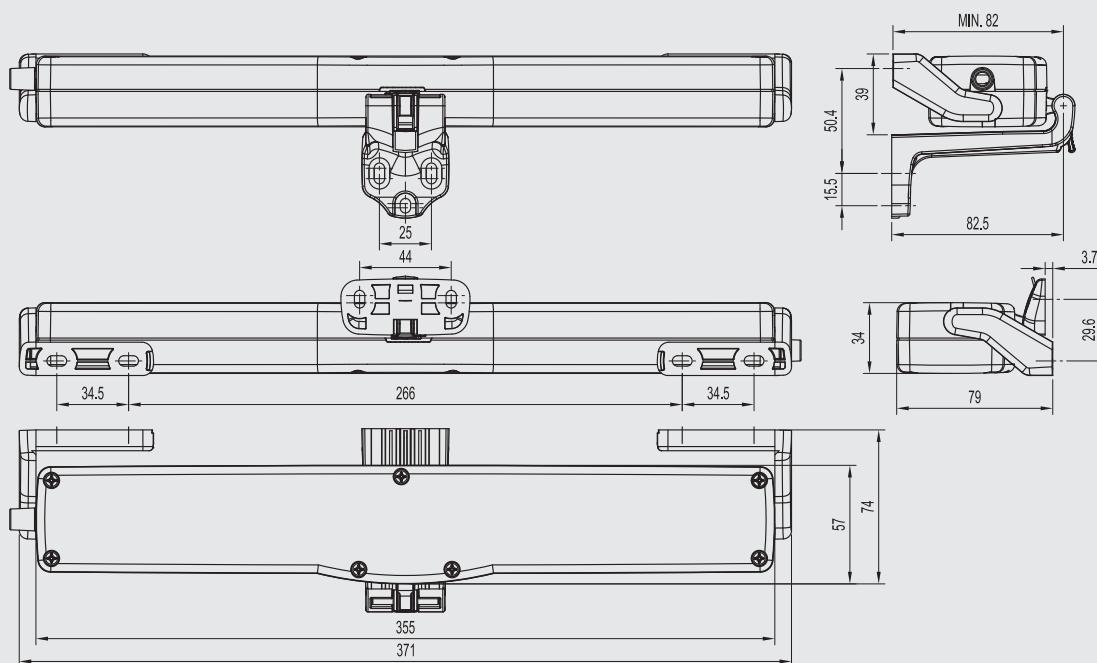
## TO BE USED WITH:

**KATO 253 24V:**  
KOUPEL 24V  
SERIE KL and SERIE KL-R  
MODIX 2/4/6



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Electric actuator with double-row four-link articulated chain enclosed in a sturdy composite housing, suitable for opening awning windows, hopper windows, flat roof domes and dormers.
- Traction and thrust power 250 N. Powered by 110-230V~50/60Hz or, alternatively, 24V DC.
- Two opening strokes with mechanical selection. Stroke-end stop during opening and closing with absorption of power and as protection against overload.
- Can be connected in parallel.
- It is supplied complete with screw-less quick coupling brackets (patented) and quick coupling awning or hopper window brackets (patented).
- Standard Colours: Black (similar to RAL9004) with black power cable, White (similar to RAL9003) and Grey (similar to RAL7047) with white cable.
- Complies with EU directives (EMC Directive, Low Voltage Directive).



### MODEL KATO 253

	230 V	24 V
Thrust and traction force	250 N	
Strokes	240, 360 mm	
Syncro <sup>3</sup> synchronization	NO	
Power supply voltage	110-230V ~ 50/60 Hz	24V DC
Rated absorbed current	0,42 A - 0,21 A	0,78 A
Power absorbed at nominal load	23-20 W	19 W
Load speed	11,6 mm/s	10,3 mm/s
Duration of load stroke	31 s	35 s
Electrical insulation	Class II	Class III
Type of service	2 cycles	5 cycles
Working temperature	-5°C - +65°C	

Protection index for electrical devices	IP40
Soft Stop	NO
Relax function	YES
Adjustment of connection to window frame	At absorption of power
Connection in parallel	YES (max. 30)
Length of power cable	1 m
Stroke-end at opening and closing	At absorption of power
Protection against overload	At absorption of power
Holding nominal force	1500N
Dimensions	356x56x33,5 mm
Weight	0,83 Kg 0,80 Kg

### KATO 253 230V:

KOUPLE 230V

SERIE KH and SERIE KH-R

RR2-M

### CODE MODEL

6030080 KATO|253 230V stroke 240/360 black

6030081 KATO|253 230V stroke 240/360 white

6030082 KATO|253 230V stroke 240/360 grey

6050057 KATO|253 24V stroke 240/360 black

6050058 KATO|253 24V stroke 240/360 white

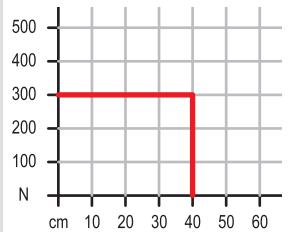
6050059 KATO|253 24V stroke 240/360 grey

# KATO | Chain actuator 300N



The strengths of Nekos products are recognised in all the actuators, but KATO was and remains the parent product of the entire family. An idea made concrete in practice. For many years, it has been used by manufacturers of windows, dome rooflights and attic windows, by electricians and in special applications.

- Brackets for quick fitting of the actuator in its working position, variable strokes that can be selected electronically, easy chain to window attachment (Nekos patent) and the relax function are the main and defining characteristics that distinguish KATO and all other actuators developed after it.
- Compact overall dimensions, only 37x59 cm in section; the body and the brackets are made strong composite material (glass fibre-reinforced polyamide).



## PATENTED

EP1723303 - EP1723304B1



MODEL	KATO230	KATO24
Thrust and traction force	300 N	
Strokes	110, 200, 300, 400 mm	
Syncre <sup>3</sup> synchronization	NO	
Power supply voltage	230V ~ 50 Hz	24V DC
Rated absorbed current	0,25 A	0,9 A
Power absorbed at nominal load	27 W	22 W
No load speed	14,6 mm/s	
Duration of no load stroke (400 mm)	27 s	
Electrical insulation	Class II	Class III
Type of service	2 cycles	5 cycles
Working temperature	-5°C - +65°C	
Protection index for electrical devices	IP30	
Soft Stop		NO
Relax function		YES
Adjustment of connection to window frame		Automatic definition of position
Connection in parallel		YES (max. 20)
Length of power cable		2 m
Stroke-end at opening		Electronic by dip-switch
Stroke-end at closing		At absorption of power
Protection against overload		At absorption of power
Holding nominal force		1600N
Dimensions		386,5x59x37 mm
Weight		0,98 Kg
		0,97 Kg

## APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
DOMES and SKYLIGHTS  
CENTER PIVOT WINDOW

CODE	MODEL
6030001	KATO 230V black
6030002	KATO 230V white
6030003	KATO 230V grey
6050001	KATO 24V black
6050002	KATO 24V white
6050003	KATO 24V grey

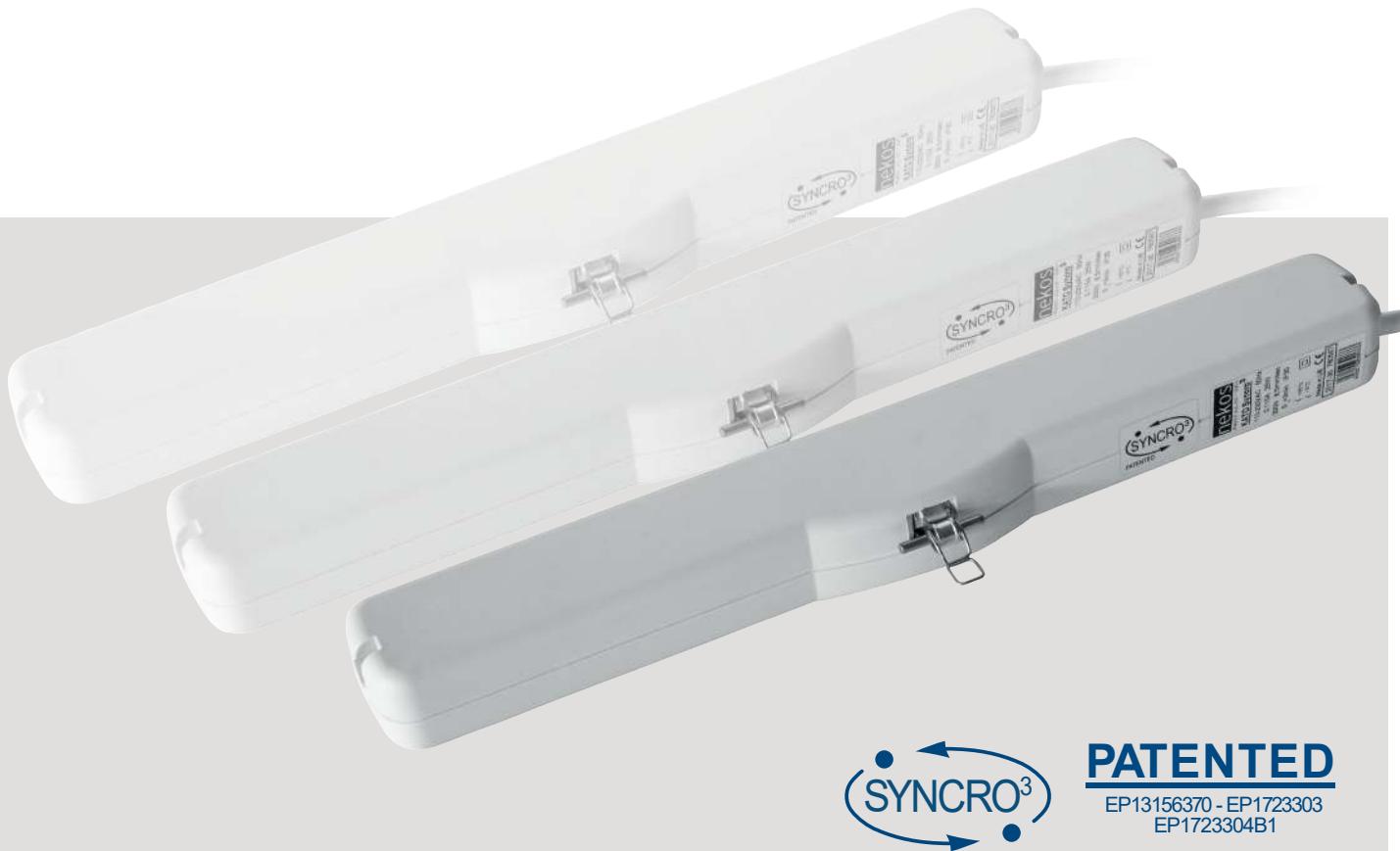
# KATO Syncro<sup>3</sup>

Actuator for  
coordinated  
synchronisation



KATO Syncro<sup>3</sup> is an evolution of the original Nekos patent. It allows perfectly coordinated synchronisation of up to 8 actuators without the use of external control units.

Syncro<sup>3</sup> is the only true window actuator synchronisation device available on the market and is only one of several patents registered by Nekos, confirming the high technological level reached by the company and its R&D department.



MODEL KATO	SYNCRO <sup>3</sup> 230	SYNCRO <sup>3</sup> 24
Thrust and traction force	300 N	
Strokes	100, 200, 400 mm	
Syncro <sup>3</sup> synchronization	YES (max 8)	
Power supply voltage	110-230V ~ 50Hz	24V DC
Rated absorbed current	0,34-0,21 A	0,95 A
Power absorbed at nominal load	26-27 W	23 W
Load speed	8,9 mm/s	
Duration of load stroke	44 s	
Electrical insulation	Class II	Class III
Type of service	2 cycles	5 cycles
Working temperature	-5°C - +65°C	
Protection index for electrical devices	IP30	

Soft Stop	YES
Relax function	YES
Adjustment of connection to window frame	Automatic definition of position
Connection in parallel	YES (max. 10)
Length of power cable	2,5 m
Stroke-end at opening	Electronic by dip-switch
Stroke-end at closing	At absorption of power
Protection against overload	At absorption of power
Holding nominal force	1600N
Dimensions	386,5x59x37 mm
Weight	1,15 Kg

## APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
DOMES and SKYLIGHTS  
CENTER PIVOT WINDOW

CODE	MODEL
6030504	KATO Syncro <sup>3</sup> 230V black
6030505	KATO Syncro <sup>3</sup> 230V white
6030506	KATO Syncro <sup>3</sup> 230V grey
6050504	KATO Syncro <sup>3</sup> 24V black
6050505	KATO Syncro <sup>3</sup> 24V white
6050506	KATO Syncro <sup>3</sup> 24V grey

# KATO ADV Radio

Remote-controlled actuator 230V

KATO ADV RADIO is the radio-controlled evolution of the KATO family.

- It has the same body but a different and evolved intelligence. Complete with a radio frequency receiver integrated in the actuator body, it is suitable for installation wherever there is a need for remote control, through the PIK Radio Remote Control unit with rolling code technology or the EVO 3-commands transmitter.
- It can be connected to a bidirectional up-down switch.



Use together with the RAIN102H rain detector allows automatic closing of the window by wire signal in the event of rain, without need for additional control units.

## PATENTED

EP1723303 - EP1723304B1



Remote control and rain sensor are provided separately.

### MODEL

	KATO ADV RADIO
Thrust and traction force	300 N
Strokes	110, 200, 300, 400 mm
Synchro <sup>3</sup> synchronization	NO
Power supply voltage	110-230V ~ 50/60Hz
Rated absorbed current	0,31-0,24 A
Power absorbed at nominal load	23-27 W
No load speed	15,7 mm/s
Duration of no load stroke	25 s
Electrical insulation	Class II
Type of service	2 cycles
Working temperature	-5°C - +65°C
Protection index for electrical devices	IP30

### KATO ADV RADIO

Soft Stop	NO
Relax function	YES
Adjustment of connection to window frame	Automatic definition of position
Connection in parallel	YES
Length of power cable	2 m
Stroke-end at opening	Electronic by dip-switch
Stroke-end at closing	At absorption of power
Protection against overload	At absorption of power
Holding nominal force	1600N
Dimensions	386,5x59x37 mm
Weight	1 Kg

## APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
DOMES and SKYLIGHTS  
CENTER PIVOT WINDOW

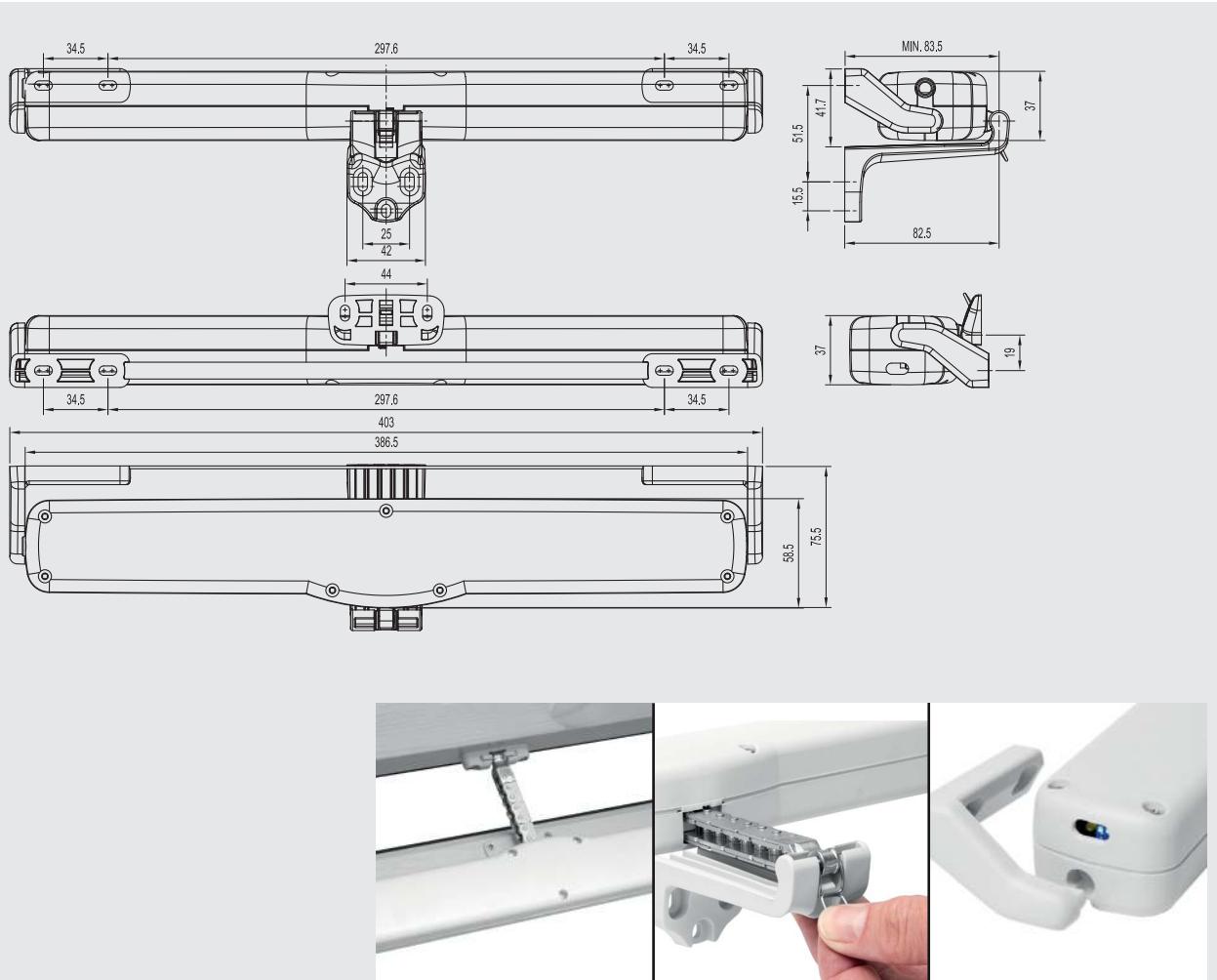
### CODE MODEL

6030580	KATO ADV Radio black
6030581	KATO ADV Radio white
6030582	KATO ADV Radio grey
7505050	RAIN102H Heated Rain sensor
7505025	PIK Remote control (30 channels)
7505051	EVO 3-commands transmitter



## KATO SERIES TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Electric actuator with a double-row four-link articulated chain enclosed in a sturdy composite material housing (glass fibre-reinforced polyamide). Suitable for opening awning windows, hopper windows, dome rooflights and dormers.
- Traction and thrust power 300 N. Powered by 110-230V~ 50Hz or, alternatively, 24V DC Safety ELV (SELV) voltage.
- Stroke-end: electronic opening stroke-end with variable strokes that can be selected at any time with the dip-switches. Closing stroke-end with power absorption.
- Can be connected in parallel.
- Supplied complete with screw-less quick coupling actuator mounting brackets (patented) and quick coupling/release awning or hopper window brackets (patented).
- Standard colours: Black (ref. RAL9004) with black power cable, White (ref. RAL9003) and Grey (ref. RAL7047) with white cable.
- Complies with EU directives (EMC Directive, Low Voltage Directive).



### TO BE USED WITH:

**KATO and KATO SYNCRO<sup>3</sup> 24V:**  
BK-LOCK  
SERIE KL and SERIE KL-R  
MODIX 2/4/6

**KATO ADV RADIO 230V:**  
PIK  
EVO  
RAIN102H

**KATO 230V:**  
SERIE KH and SERIE KH-R  
RR2-M

**KATO SYNCRO<sup>3</sup> 230V:**  
SERIE KH and SERIE KH-R

# KATO 305

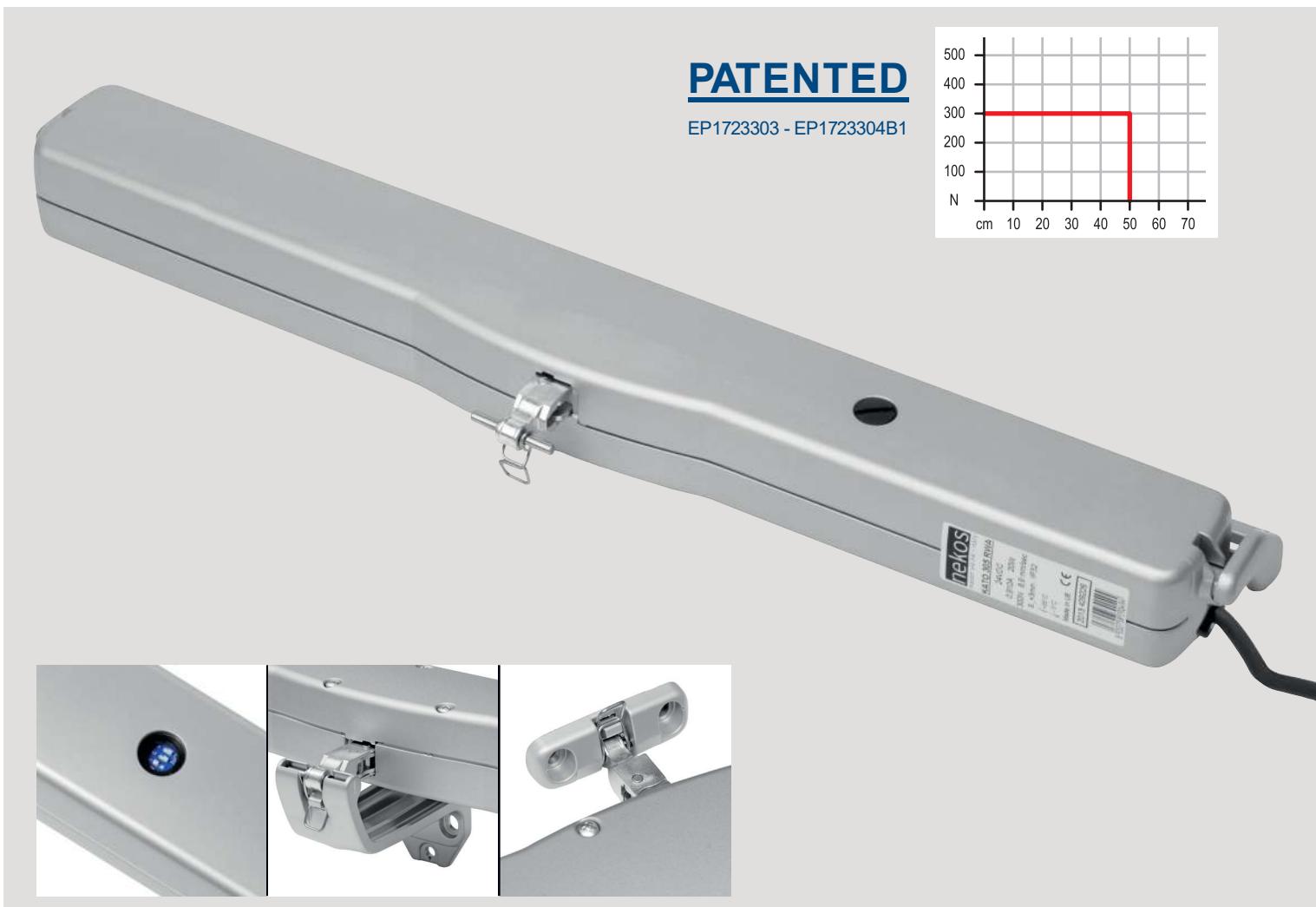
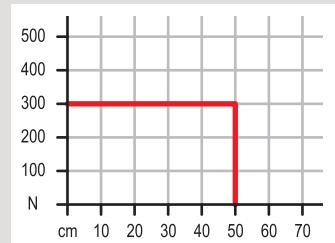
Metal chain  
actuator 300N

The SHEV version of KATO 305 has passed the toughest heat and fire resistance tests indicated by standard EN 12101-2:2003-09, with flying colours, obtaining B 300 classification with certificate no. 13-000921 at the IFT testing institute in Rosenheim in 2013.

- KATO 305 actuators ensure safety, quality, efficiency, reliability and simplicity of construction, in an attractive design for incorporation into state-of-the-art windows.
- New electronic technology with a microprocessor for position control and management of all phases of operation. The body is made of die cast aluminium and the brackets are zinc alloy.
- Easy to install, thanks to quick-coupling installation on the support brackets and no need for screws or fixings (Nekos patented system); another Nekos patent is the quick release of the window for easy cleaning.
- Strokes can be selected through dip-switches.

**PATENTED**

EP1723303 - EP1723304B1



## APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
DOMES and SKYLIGHTS  
CENTER PIVOT WINDOW

## TO BE USED WITH:

**KATO 305|RWA 24V:**

BK-LOCK  
SERIE KL and SERIE KL-R  
FV-3 and FV-6  
MODIX 2/4/6

**KATO 305 230V:**

SERIE KH and SERIE KH-R  
RR2-M

**KATO 305|RWA**  
24V

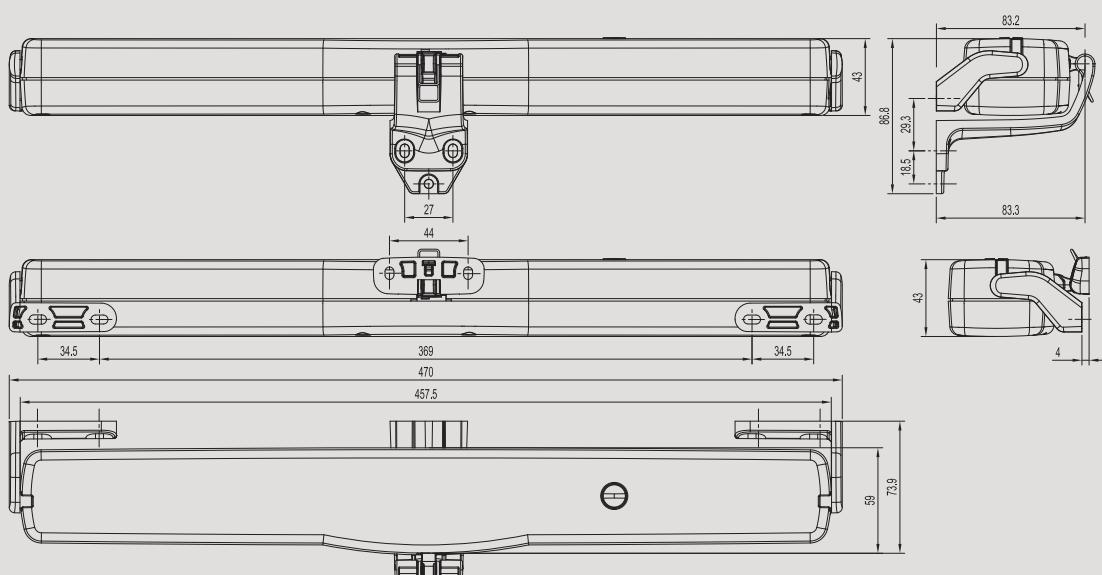


**KATO 305**  
230V



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Electric actuator with double-row four-link articulated chain enclosed in a sturdy aluminium housing, suitable for opening awning windows, hopper windows, dome rooflights and dormers. Thrust and traction power 300 N.
- Built to operate at 110-230V~ 50/60Hz voltage or, for SHEV systems, at 24V DC Safety ELV (SELV)-voltage, in accordance with European Standard EN12101-2.
- Electronic opening stroke-end with three strokes (200 - 300 - 500 mm), which can be selected at any time with dip switches; closing end-stroke with power absorption as protection against overload. Can be connected in parallel.
- Supplied complete with universal quick-coupling, screw-less pivoting support brackets (patented). Window brackets must be requested separately.
- Standard colours: Black (RAL9005) with black power cable, White (RAL9010) and Grey (RAL9006) with white cables. The 24V versions have a grey silicone cable.
- Complies with EU directives (EMC Directive, Low Voltage Directive).



MODEL KATO 305	230V	24V RWA
Thrust and traction force	300 N	
Strokes	200, 300, 500 mm	
Syncro <sup>3</sup> synchronization	NO	
Power supply voltage	110-230V ~ 50/60 Hz	24V DC
Rated absorbed current	0,32-0,21 A	0,95 A
Power absorbed at nominal load	25-28 W	23 W
No load speed	9,2 mm/s	
Duration of no load stroke (500 mm)	54 s	
Electrical insulation	Class II	Class III
Type of service	2 cycles	5 cycles
Working temperature	-5°C - +65°C	
Protection index for electrical devices	IP32	
Soft Stop	YES	

Relax function	YES
Adjustment of connection to window frame	Automatic definition of position
Connection in parallel	YES (max. 10)
Connection with electromechanical lock	max. 1 BK-LOCK
Length of power cable	2 m
Stroke-end at opening	Electronic by dip-switch
Stroke-end at closing	At absorption of power
Protection against overload opening/closing	At absorption of power
Holding nominal force	2000N
Dimensions	456x60x43 mm
Weight	1,55 Kg

CODE	MODEL
6031001	KATO 305 230V black
6031002	KATO 305 230V white
6031003	KATO 305 230V grey
6051001	KATO 305 RWA 24V black
6051002	KATO 305 RWA 24V white
6051003	KATO 305 RWA 24V grey

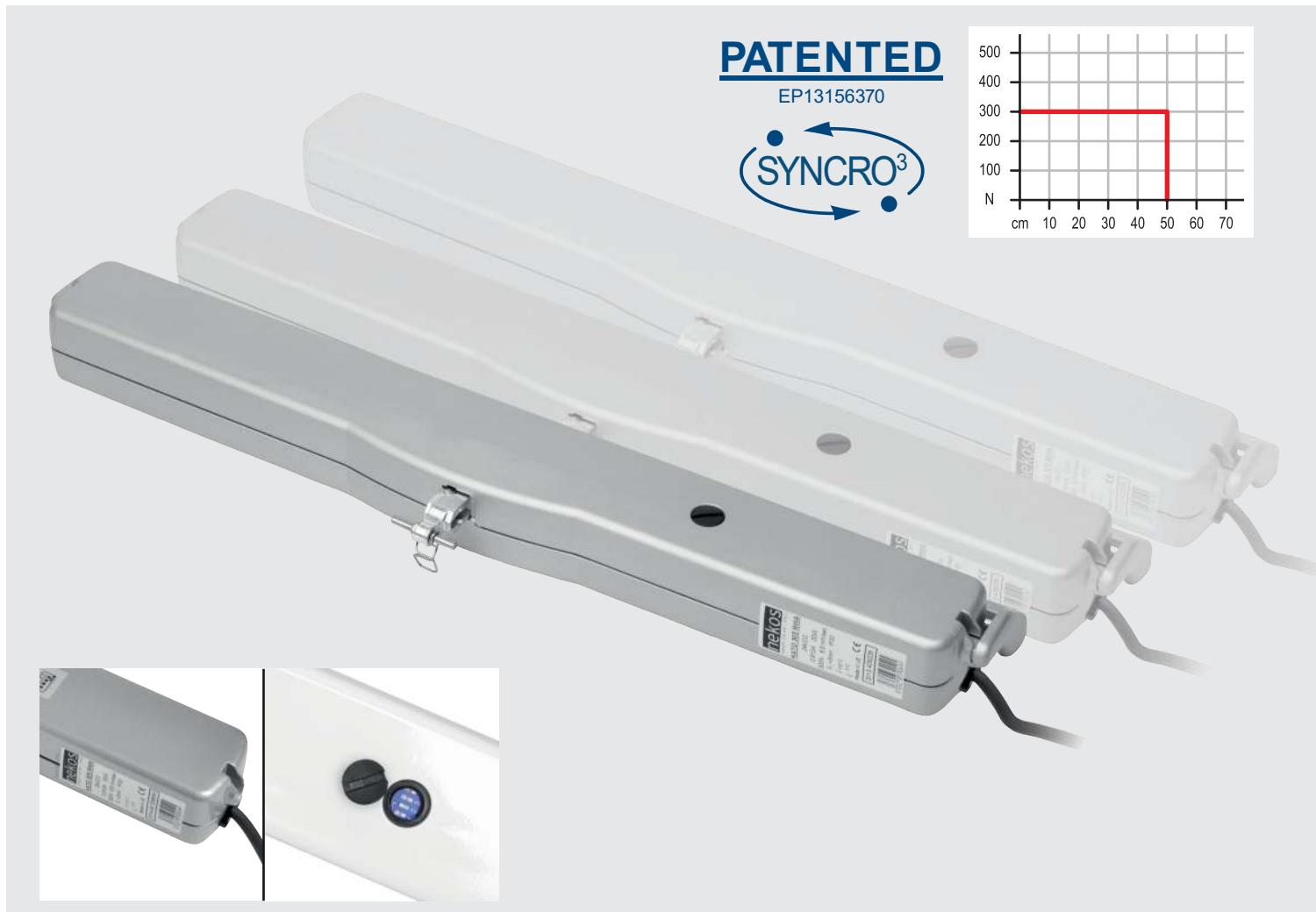
# KATO 305 Syncro<sup>3</sup>

**Metal chain actuator for synchronisation**

The Syncro<sup>3</sup> version, based on communication between the actuators through a direct connection, allows instantaneous control of the force, speed and resistance of each of them through an encoder that reads the work of the individual motors.

This continuous exchange of information allows the actuators to open and close in synchrony.

- Syncro<sup>3</sup> software now allows you to directly connect up to 8 motors without the need for external synchronisation units.
- The designer must calculate the number of actuators to place on the windows, which varies according to the size, weight and type of the windows.
- Strokes can be selected through dip-switches.



## APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
DOMES and SKYLIGHTS  
CENTER PIVOT WINDOW

## TO BE USED WITH:

**KATO 305|RWA Syncro<sup>3</sup> 24V:**

BK-LOCK  
SERIE KL and SERIE KL-R  
FV-3 and FV-6  
MODIX 2/4/6

**KATO 305 Syncro<sup>3</sup> 230V:**  
SERIE KH and SERIE KH-R  
RR2-M

**KATO 305|RWA Syncro<sup>3</sup>**  
24V

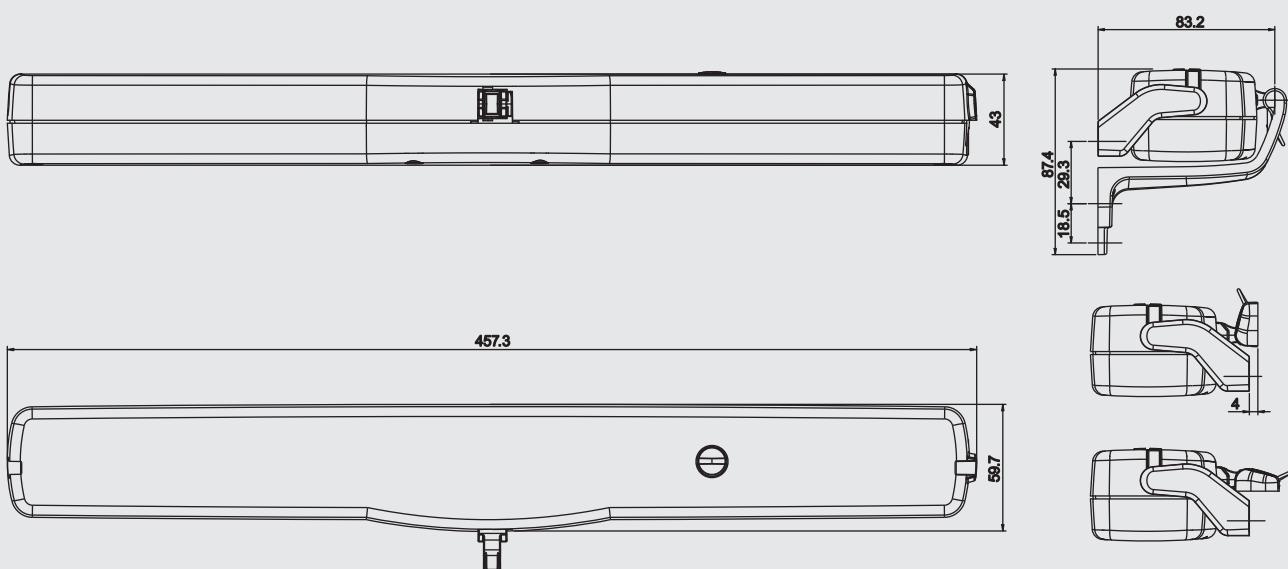


**KATO 305 Syncro<sup>3</sup>**  
230V



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Electric actuator with double-row four-link articulated chain enclosed in a sturdy aluminium housing, suitable for opening awning windows, hopper windows, dome rooflights and dormers. Thrust and traction power 300 N.
- Built to operate with 110-230V~ 50/60Hz voltage or 24V DC Safety ELV (SELV) voltage SHEV systems, in accordance with European Standard EN12101-2.
- Electronic opening stroke-end with three strokes (200 - 300 - 500 mm), which can be selected at any time with dip switches; closing end-stroke with power absorption as protection against overload. Can be connected in parallel.
- Supplied complete with universal quick-coupling, screw-free pivoting support brackets (patented). Window brackets must be requested separately.
- Standard Colours: Black (RAL9005) with black power cable, White (RAL9010) and Grey (RAL9006) with white cables. The 24V versions have a grey silicone cable.
- Complies with EU directives (EMC Directive, Low Voltage Directive).



### MODEL KATO 305 Syncro<sup>3</sup>

	230V	RWA 24V	
Thrust and traction force	300 N		YES
Strokes	200, 300, 500 mm		YES
Syncro <sup>3</sup> synchronization	YES (max 8)		Automatic definition of position
Power supply voltage	110-230V ~50/60 Hz	24V DC	
Rated absorbed current	0,32-0,21 A	0,95 A	YES (max 10)
Power absorbed at nominal load	25-28 W	23 W	2,5 m
No load speed	9,2 mm/s		Electronic by dip-switch
Duration of no load stroke (500 mm)	54 s		At absorption of power
Electrical insulation	Class II	Class III	At absorption of power
Type of service	2 cycles	5 cycles	2000N
Working temperature	-5°C - +65°C		456x60x43 mm
Protection index for electrical devices	IP32		1,55 Kg

### CODE MODEL

6031504	KATO 305 230V Syncro <sup>3</sup> black
6031505	KATO 305 230V Syncro <sup>3</sup> white
6031506	KATO 305 230V Syncro <sup>3</sup> grey

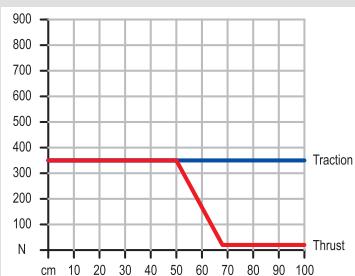
6051504	KATO 305 RWA 24V Syncro <sup>3</sup> black
6051505	KATO 305 RWA 24V Syncro <sup>3</sup> white
6051506	KATO 305 RWA 24V Syncro <sup>3</sup> grey

# INKA 356

## Metal chain actuator 350N

INKA 356 is a product that extends the offer in terms of power (350 N) and stroke range (from 100 to 1000 mm), while also adapting to all types of windows (awning windows, hopper windows, dome rooflights and dormers) and providing the possibility of flush mounting.

- The machine, enclosed in an aluminium housing, features an elegant design and compact dimensions (34,6 x 37 mm), allowing surface mounting with minimal visual impact, flush mounting and installation on curtain walls.
- Natural Smoke and Heat Extraction (N-SHE/SHEV): INKA 356 RWA is made entirely of metal and has been certified up to a stroke of 600 mm in accordance with standard EN12101-2, for use in SHEV systems.
- Silent operation: only 41 dB, with no loss in power.
- Its sophisticated electronics and microprocessor allow easy integration into industrial and home automation systems and connection to other devices to transmit the window open/closed signal (optional function).
- The INKA 356 actuator combined with the K-LOCK electromechanical lock and perimeter fittings provides a reliable burglar-proof window system and high thermal insulation values thanks to perfect window closure.



### PATENTED

EP1723303 - EP1723304B1  
EP13156370



### APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
DOMES and SKYLIGHTS  
CENTER PIVOT WINDOW

CODE	MODEL
6031050	Actuator INKA 356 230VAC - stroke 300 mm
6031051	Actuator INKA 356 230VAC - stroke 600 mm
6031052	Actuator INKA 356 230VAC - stroke 800 mm
6031053	Actuator INKA 356 230VAC - stroke 1000 mm
6051050	Actuator INKA 356 RWA 24VDC - stroke 300 mm
6051051	Actuator INKA 356 RWA 24VDC - stroke 600 mm
6051052	Actuator INKA 356 RWA 24VDC - stroke 800 mm
6051053	Actuator INKA 356 RWA 24VDC - stroke 1000 mm

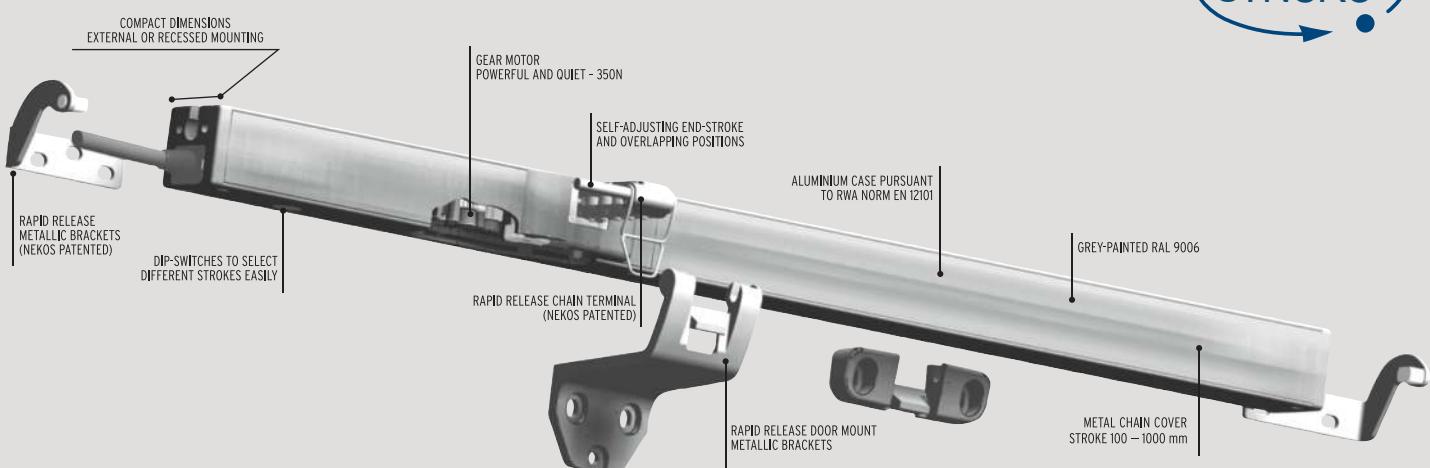
# INKA 356 Syncro<sup>3</sup>

Metal chain actuator 350N for synchronisation

INKA 356 Syncro<sup>3</sup> has all the features of the solo version, with the addition of Syncro<sup>3</sup> technology (Nekos patent): up to eight INKA Syncro<sup>3</sup> actuators or electromechanical locks can be connected in perfect synchronisation, without the use of external control units.

**PATENTED**

EP1723303 - EP1723304B1  
EP13156370



## APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
DOMES and SKYLIGHTS  
CENTER PIVOT WINDOW

CODE	MODEL
6031550	Actuator INKA 356 230VAC Syncro <sup>3</sup> - stroke 300 mm
6031551	Actuator INKA 356 230VAC Syncro <sup>3</sup> - stroke 600 mm
6031552	Actuator INKA 356 230VAC Syncro <sup>3</sup> - stroke 800 mm
6031553	Actuator INKA 356 230VAC Syncro <sup>3</sup> - stroke 1000 mm
6051550	Actuator INKA 356 RWA 24VDC Syncro <sup>3</sup> - stroke 300 mm
6051551	Actuator INKA 356 RWA 24VDC Syncro <sup>3</sup> - stroke 600 mm
6051552	Actuator INKA 356 RWA 24VDC Syncro <sup>3</sup> - stroke 800 mm
6051553	Actuator INKA 356 RWA 24VDC Syncro <sup>3</sup> - stroke 1000 mm

**INKA 356|RWA 24V**  
**INKA 356|RWA Syncro<sup>3</sup> 24V**

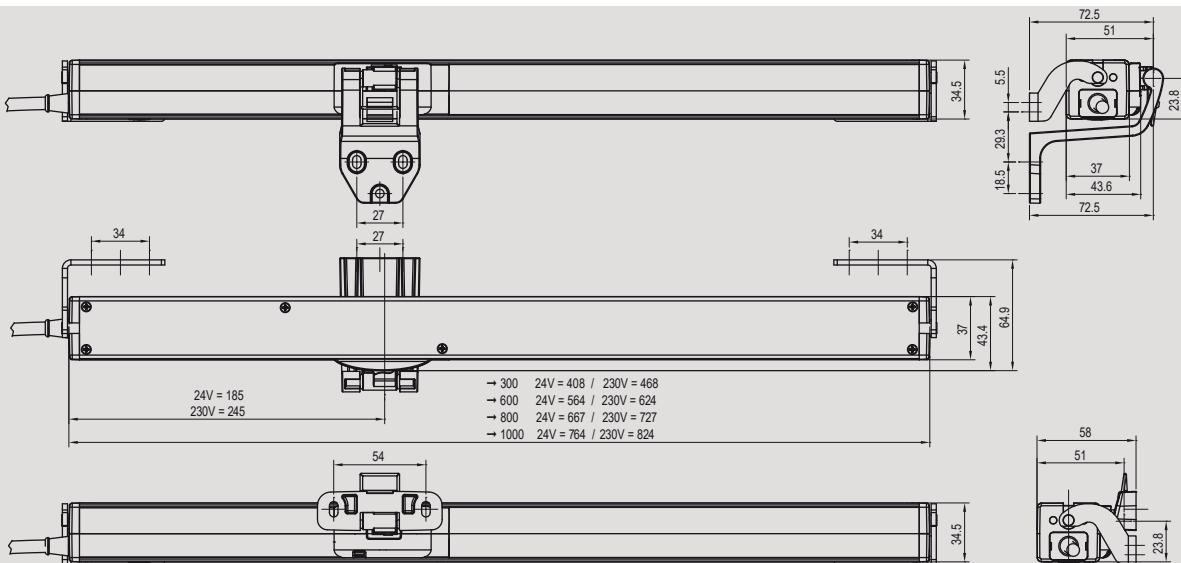


**INKA 356 230V**  
**INKA 356 Syncro<sup>3</sup> 230V**



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Stainless steel double-row four-link articulated chain for greater durability and resistance to weather and corrosion.
- Power control over the entire stroke (stops in the event of overload). Progressive starting (Soft Start) and closing (Soft Stop).
- Stroke end: electronic stroke-end during opening, with a variable stroke that can be selected through dip-switches, self-adjustment of the closing position (with power absorption) and automatic overlap acquisition.
- Relax Function: release of tension in mechanical parts after each stroke-end generated by a stop for power absorption.
- Syncro<sup>3</sup> technology (Nekos patent).
- Aluminium housing painted grey (RAL 9006) with a white power cable (230V version) or a grey power cable (24V version), screw-less quick-coupling metal (die cast aluminium) window support and connection brackets (Nekos patent).
- All mounting brackets must be requested separately.
- Complies with EU directives (EMC Directive, Low Voltage Directive).



### MODEL INKA 356

### 230V      RWA 24V

Thrust force	350 N	
Traction force	350 N (see force chart)	
Strokes mm (selectable alternative strokes)	300 (100, 200) 600 (400, 500) 800 (600, 700) 1000 (800, 900)	-
Syncro <sup>3</sup> synchronization	YES (max 8)	
Power supply voltage	110-230V ~ 50/60 Hz	24V DC
Rated absorbed current	0,33-0,22 A (230V)	0,95 A
Power absorbed at nominal load	27-29 W	23 W
No load/load speed	11 / 9,6 mm/s	
Duration of max load stroke (Open)	300/600/800/1000 = 28 / 54 / 72 / 90 s	
Duration of max load stroke (Close)	300/600/800/1000 = 36 / 67 / 88 / 109 s	
Electrical insulation	Class II	Class III

Type of service	2 cycles; SYNCRO <sup>3</sup> 5 cycles	
Working temperature	-10°C - +70°C	
Protection index for electrical devices	IP32	
Soft Stop / Start	YES	
Relax function	YES	
Adjustment of connection to window frame	Automatic definition of position	
Length of power cable	2 m, SYNCRO <sup>3</sup> 2,5 m	2 m
Stroke-end at opening	Electronic by dip-switch setting	
Stroke-end at closing	At absorption of power	
Protection against overload	At absorption of power	
Dimensions 230V (mm)	34,6x37 L= 468/624/727/824	
Dimensions SHEV 24V (mm)	34,6x37 L= 408/564/667/764	
Holding nominal force	1800 N	
Weight (Kg)	0,9/1,4/1,8/2,2	0,8/1,3/1,7/2,1

**TO BE USED WITH:**

**INKA 356 RWA 24V**  
**INKA 356 RWA 24V Syncro<sup>3</sup>:**  
 K-LOCK  
 SERIE KL and SERIE KL-R  
 MODIX 2/4/6  
 FV-3 and FV-6

**INKA 356 230V**  
**INKA 356 230V Syncro<sup>3</sup>:**  
 SERIE KH and SERIE KH-R  
 RR2-M

# ELECTROMECHANICAL LOCKS



# K-LOCK | Electromechanical lock 600N

K-LOCK is the result of Nekos development concerning the automatic locking of windows, curtain walls and doors. An electric lock with integrated electronic control, able to identify at any time the status of the whole window/actuator/locking system and to perform the correct opening/closing sequence.

- The power (600 N when running and 850 N when starting) ensures highly reliable operation even in harsh conditions.
- A low current consumption (0,85 A) and silent functioning are its essential characteristics.
- Manufactured in aluminium with compact dimensions (25x25 mm). Easy and quick to install, both at sight and flush mounted. Electronic adjustment of the stroke by means of dip-switches.
- Combined with the perimeter hardware of the window (with or without actuators), it is an excellent burglar-proof window lock and, thanks to perfect closure of the sash, it also guarantees high thermal insulation values.
- The BK-LOCK version is used only in combination with 24V KATO (except KATO 253) and KIMO actuators.



**!** The accessory with the 90° fork is available upon request - code 9800122



## APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
CASEMENT WINDOW  
CENTER PIVOT WINDOW  
SLIDER WINDOW/DOOR

## TO BE USED WITH:

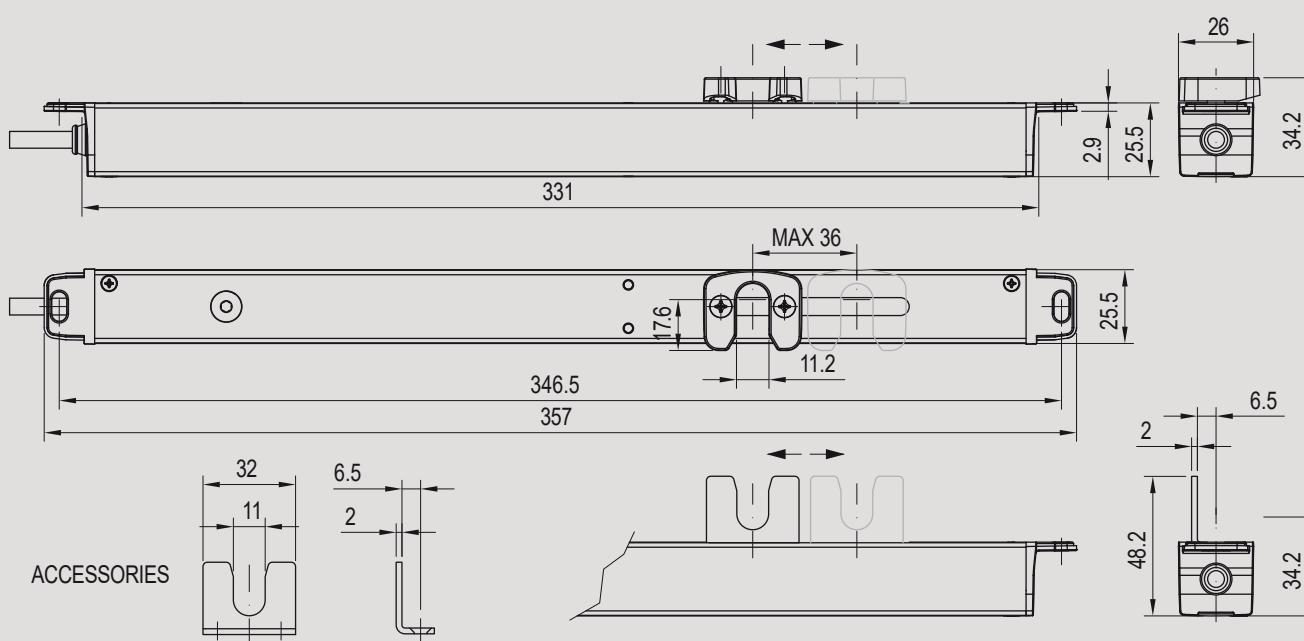
### K-LOCK:

KIMO 202  
INKA 356 24V  
INKA 356 24V Syncro<sup>3</sup>  
SKYRO 650  
ROCK  
FLIK



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Electromechanical lock for centralised operation of window perimeter fittings, in association with prepared chain actuators or by itself in burglar-proof applications.
- Power control over the entire stroke with safety stop in the event of overload.
- Electronic opening and closing stroke-end; stroke selectable with dip-switches.
- Can be connected in parallel with other K-LOCKS and actuators with Syncro<sup>3</sup> technology (Nekos patent) up to a total of eight units.
- Anodised aluminium housing, with PVC cable and metal fixing heads.
- Complies with EU directives (EMC Directive, Low Voltage Directive).

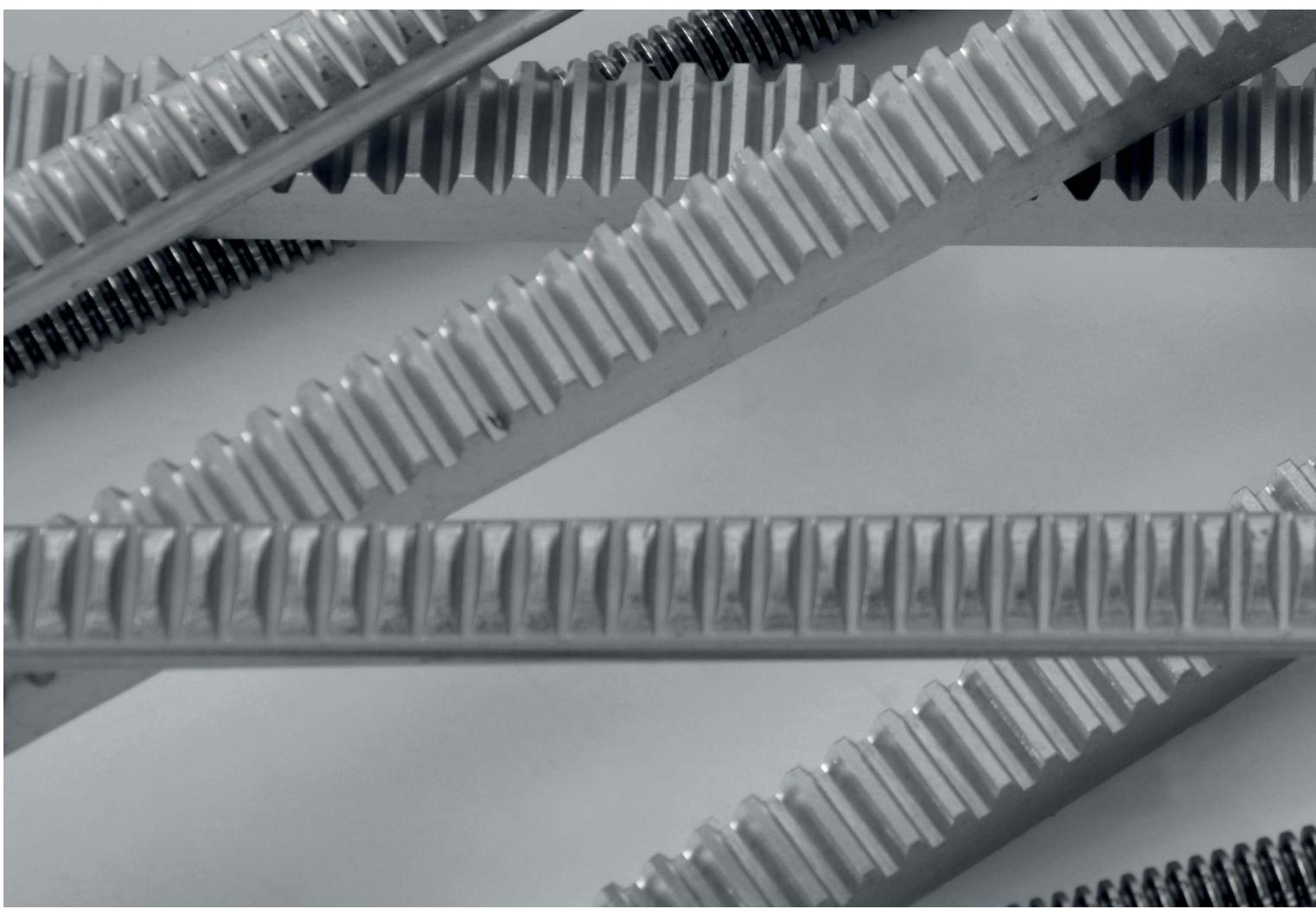
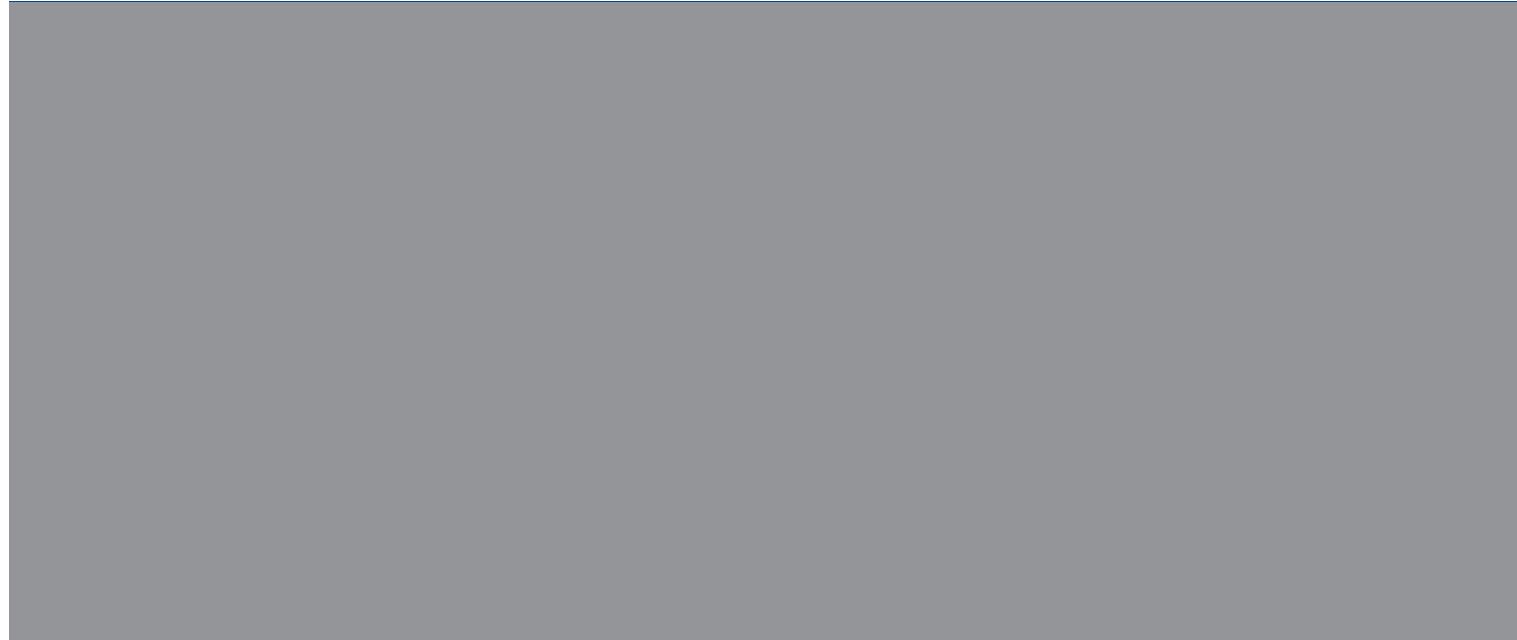


MODEL	K-LOCK / BK-LOCK - 24V		
Thrust and traction force	600 N - 850 N starting force	Structure material	Extruded aluminium alloy
Strokes	18 mm - 36 mm	Working temperature	-20°C - +70°C
Power supply voltage	24V DC	Protection index for electrical devices	IP40
Current absorbed at nominal load	0,85 A during the stroke 1,2 A at intervention of the current interlock	Stroke-end at opening and closing	Electronic by dip-switch
Power absorbed at nominal load	20 W	Stroke selection	Selectable by dip-switches
No-load speed	5 mm/s	Operation with chain actuator	Selectable by dip-switches
Duration of no load stroke	4 s (18 mm) - 7,2 s (36 mm)	Stroke-end at closing	Electronic, fix
Electrical insulation	Class III	Power supply cable	3x0,5 mm <sup>2</sup> - in PVC - 2 m
Type of service	5 cycles	Protection against overload at opening and closure	At absorption of power
		Dimensions	25,5x25,5x357 mm
		Weight	0,560 Kg

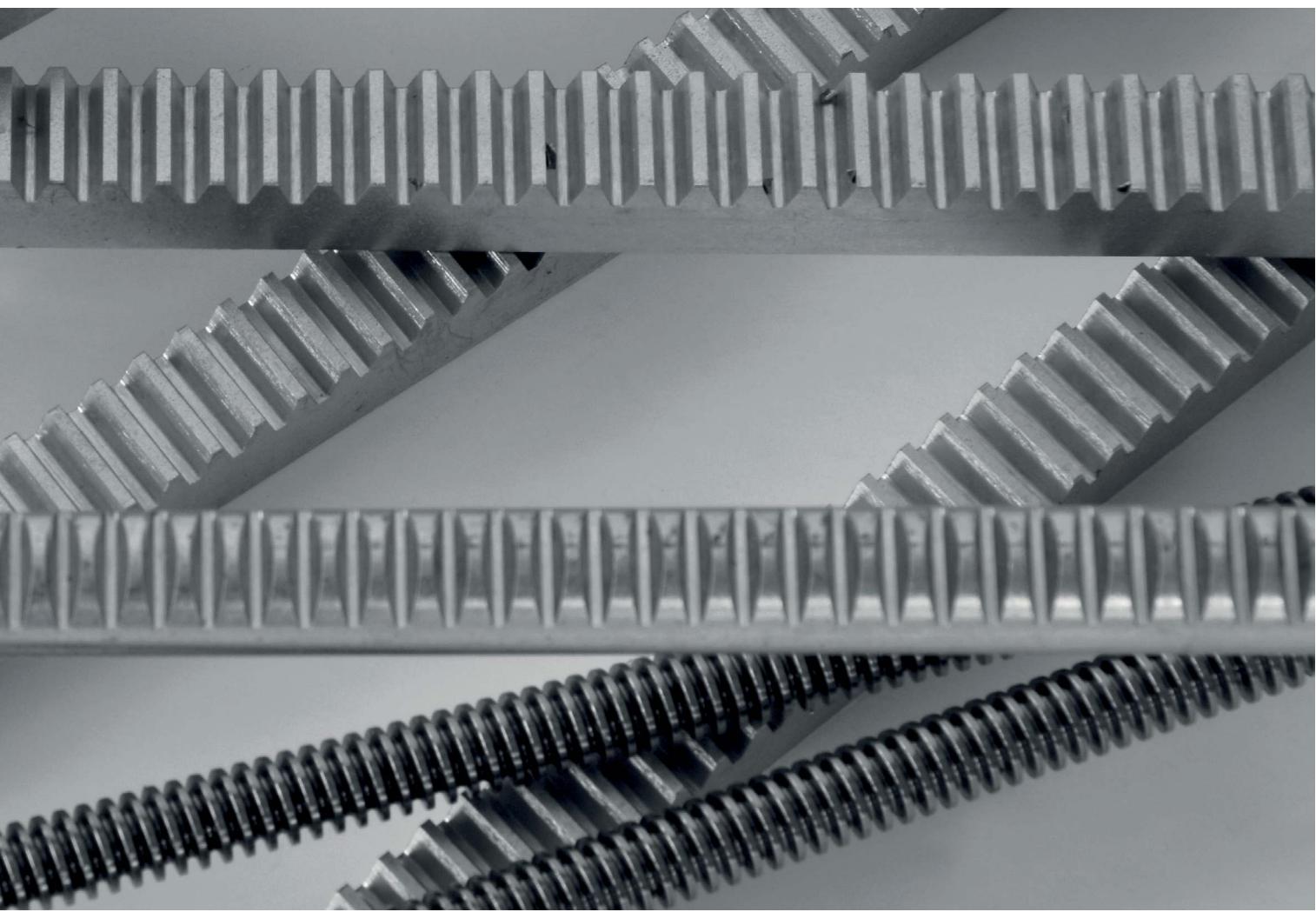
### BK-LOCK:

KIMO  
 KATO 24V  
 KATO Syncro<sup>3</sup> 24V  
 KATO 305 RWA  
 KATO 305 RWA Syncro<sup>3</sup> 24V

CODE	MODEL
6275006	K-LOCK Electromechanical Lock 24V - Stroke 18/36 mm
6275008	BK-LOCK Electromechanical Lock 24V - Stroke 18/36 mm
(for KATO series - except KATO 253 - and KIMO)	



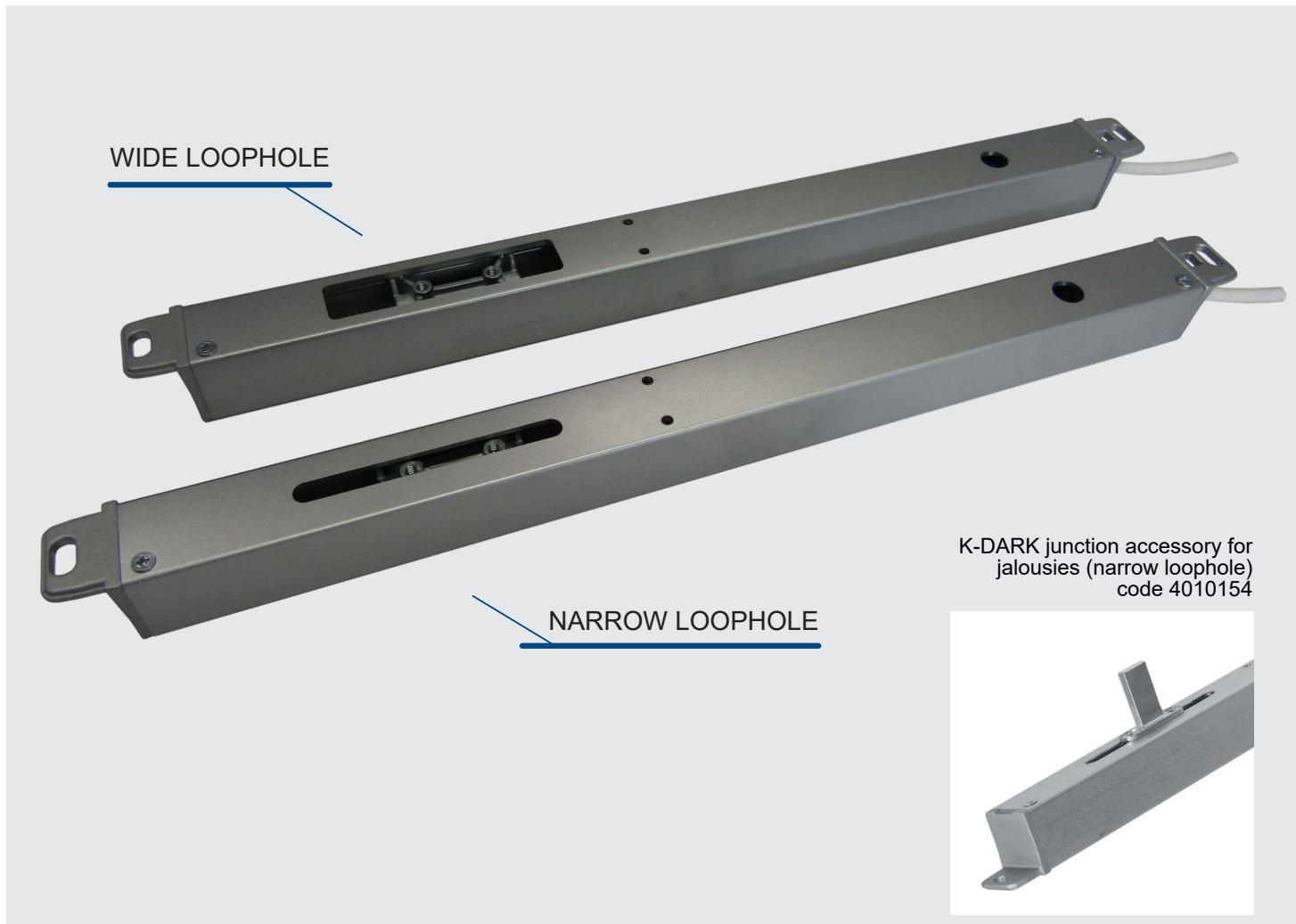
# LINEAR ACTUATORS



# K-DARK | Actuator for louvre windows and jalousies 600N

K-DARK is an actuator derived from K-LOCK, designed for opening and closing louvre windows, shutters, sunshades and jalousies. The product's great versatility allows it to be installed whether surface- or flush-mounted on any window of the above mentioned types.

- The power (600 N when running and 850 N when starting) ensures highly reliable operation even in harsh conditions.
- Equipped with sophisticated electronics with microprocessor, it's characterised by low current consumption (0.85 A) and silent functioning.
- Upon request, it is possible to modify the strokes, the force, the opening/closing speed. Moreover a stroke-end signal can also be provided.
- It can be installed alone or combined with other K-DARK actuators using Syncro<sup>3</sup> technology (Nekos patent).
- Manufactured in aluminium with compact dimensions (25x25 mm). Easy and quick to install, both at sight and flush mounted. Electronic adjustment of the strokes by means of dip-switches.
- If necessary, several locks can be synchronised in order to obtain a perfect alignment.



## APPLICATIONS

AWNING WINDOW  
LOUVERS WINDOW  
JALOUSIES  
ROOF WINDOW

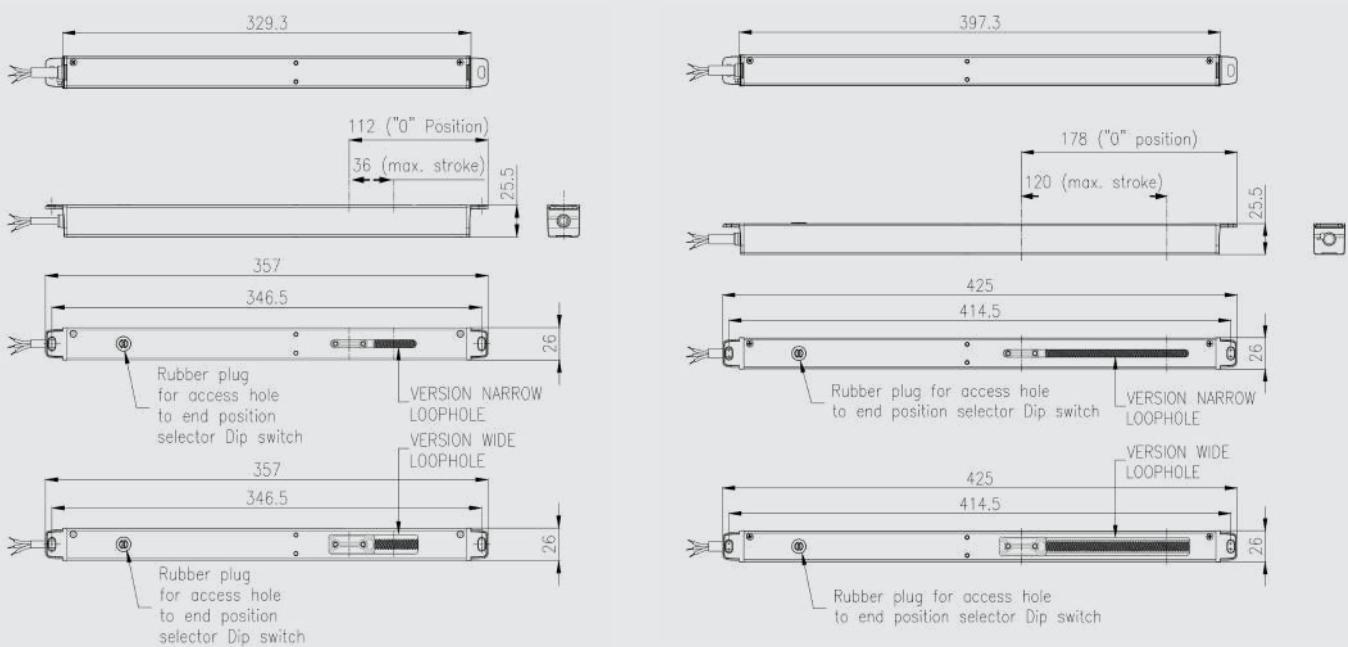
## TO BE USED WITH:

SERIE KL and SERIE KL-R  
MODIX 2/4/6



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Linear actuator for opening louvred windows, solar shading blades and jalousies.
- 24V DC power supply, 600 N power (850 on starting) and power control during the entire stroke, with safety stop in the event of overload.
- Electronic stroke-end for opening and closing. Strokes selectable with dip-switches.
- Can be connected in parallel with other K-DARKs and/or actuators with Syncro<sup>3</sup> technology (Nekos patent) up to a total of eight units.
- Anodised aluminium housing, with PVC cable and metal fixing heads.
- Complies with EU directives (EMC Directive, Low Voltage Directive).



MODEL K-DARK	max stroke 36	max stroke 120
Thrust and traction force	600 N - 850 N starting force	
Strokes	< 36 mm	< 120 mm
Power supply voltage	24V DC	
Syncro <sup>3</sup> synchronization	YES (max. 8)	
Current absorbed at nominal load	0,85 A during the stroke 1,2 A at intervention of the current interlock	
Power absorbed at nominal load	~ 20 W	
No-load speed	5 mm/s	
Electrical insulation	Class III	
Type of service	5 cycles	

Insertion ratio	30 %
Structure material	Extruded aluminium alloy
Working temperature	-20°C - +70°C
Protection index for electrical devices	IP40
Stroke-end at opening and closing	Electronic by dip-switch
Power supply cable	3x0,5 mm <sup>2</sup> - 2,00 m
Protection against overload at opening and closure	Current cut-off due to power absorption
Dimensions (mm)	25,5x25,5x357   25,5x25,5x425
Weight	0,560 Kg

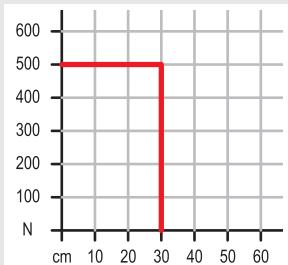
CODE	MODEL
6275017	K-DARK 24V 600N max stroke 36 mm Narrow loophole
6275019	K-DARK 24V 600N max stroke 36 mm Wide loophole
6275021	K-DARK 24V 600N max stroke 120 mm Narrow loophole
6275022	K-DARK 24V 600N max stroke 120 mm Wide loophole
K-DARK is provided without junction accessory which has to be requested separately:	
4010154	K-DARK junction accessory for jalousies (Narrow loophole)
4010156	K-DARK junction accessory for jalousies (Narrow loophole)
4010155	K-DARK 90° junction accessory (Wide loophole)

# ROCK

## Linear actuator with rigid rod 500N

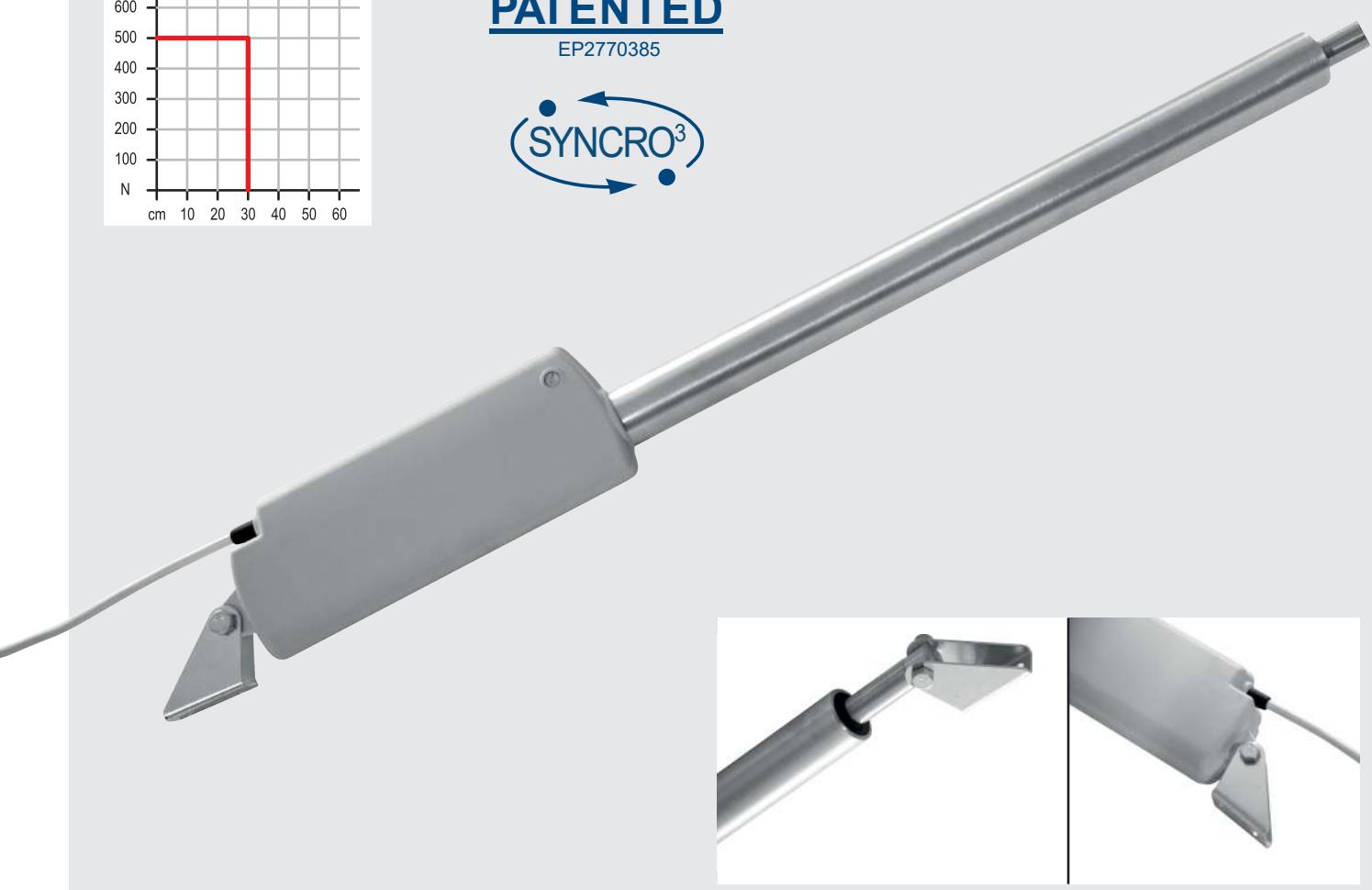
ROCK is a linear actuator with stiff rod designed for industrial applications.

- It has compact dimension and is easy to install: ROCK is able to perform the opening of louvre windows, solar shading blades and dome.
- Made in two versions: 110-230V~(AC) 50/60Hz or 24V DC power supply version provided with synchronization system (Nekos Syncro<sup>3</sup> patent) for a variety of applications, thanks also to its force of thrust (500 N) and high IP66 protection rating, for use in dusty and damp environments.
- Fixed electronic, non-programmable return end-stroke: the outward end-stroke is programmable with magnetic device and according to the application needing. This end-stroke technology is easy to program and allows numerous applications where non-standard strokes with millimetric end-strokes are required.
- Start with acceleration ramp to facilitate the adjustment of solar shading blades or jealousies controlled by light sensor (lux-meter).



**PATENTED**

EP2770385



### APPLICATIONS

AWNING WINDOW  
SOLAR SHADING BLADES  
LOUVERS WINDOW  
JALOUSIES  
ROOF WINDOW and DOMES

### TO BE USED WITH:

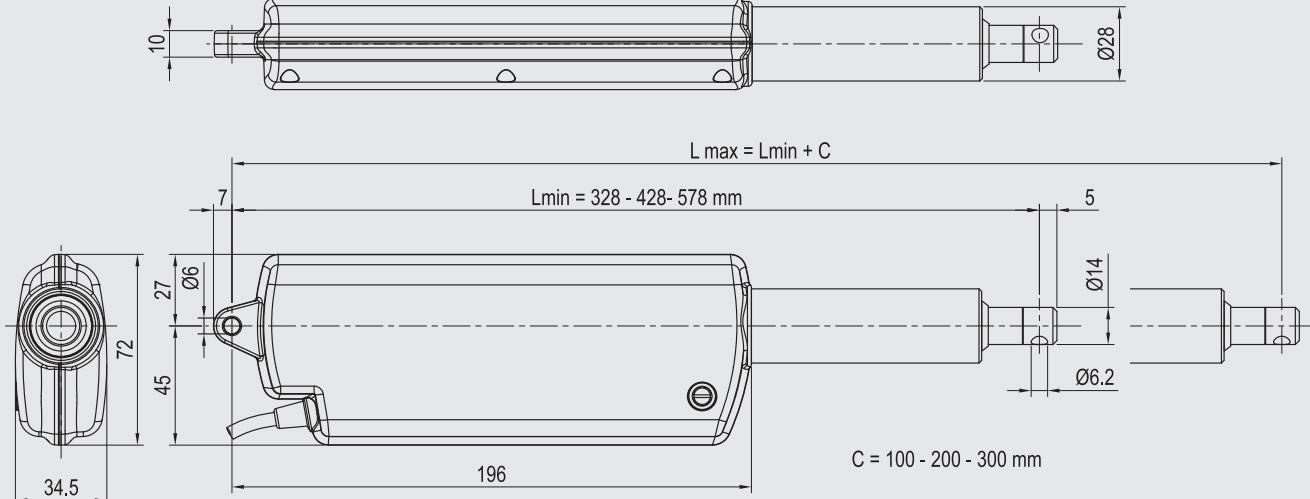
**ROCK 230V:**  
SERIE KH and KH-R  
RR2-M

**ROCK 24V Syncro<sup>3</sup>:**  
SERIE KL and KL-R  
MODIX 2/4/6  
K-LOCK



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Linear actuator with stiff rod and traction/thrust force of 500 N, enclosed in a suitable container of high-resistance composite material (Pa6+35%GF) with fibreglass, suitable for operating solar shading blades, louvre windows, awning opening windows and dome rooflights.
- Power supply voltage: 110-230V~ (AC) 50/60Hz or 24V DC power supply with synchronised function; prepared to be interfaced with K-LOCK electromechanical lock (only 24V) and parallel connectable.
- Available in three different versions with maximum stroke of 100, 200 and 300 mm. Magnetic opening end-stroke adjustable along the entire length of the stroke. End-stroke stop while closing with power absorption also acting as overload protection.
- Supplied complete with brackets and accessories for mounting the actuator and connecting the rod.
- Standard colours: Grey (approx. RAL7047) with Anodised aluminium metal parts and white cable.
- Complies with the EU Directives (EMC Directives, Low Voltage Directives).



MODEL ROCK	230V	24V
Thrust and traction force	500 N	
Strokes	100, 200, 300 mm	
Power supply voltage	110-230V ~ 50/60 Hz	24V DC
Current absorption at nominal load	0,21 / 0,14 A	0,63 A
Power absorption at nominal load	17 W	15 W
Average speed	4 mm/s	
End stroke stop	Electronic with magnetic selector	
Breaking current	-	0,80 A
Stroke travel at max. load	25 / 50 / 75 s	
Duration of the ramp (start and stop)	1 s	
Electrical insulation	Class II	Class III
Type of service	2 cycles	5 cycles

Working temperature	-20°C - + 70°C
Protection index for electrical devices	IP66
Soft Stop	NO
Relax function	YES
Syncro <sup>3</sup> synchronization (Nekos Patent)	- YES (max 8)
Connection in parallel	YES (max. 30)
Length of power cable	2 m
Stroke-end at opening	At absorption of power
Stroke-end at closing	At absorption of power
Protection against overload	At absorption of power
Dimensions	72x34,5x344 / 444 / 594 mm
Weight	~ 0,890 Kg ~ 0,870 Kg

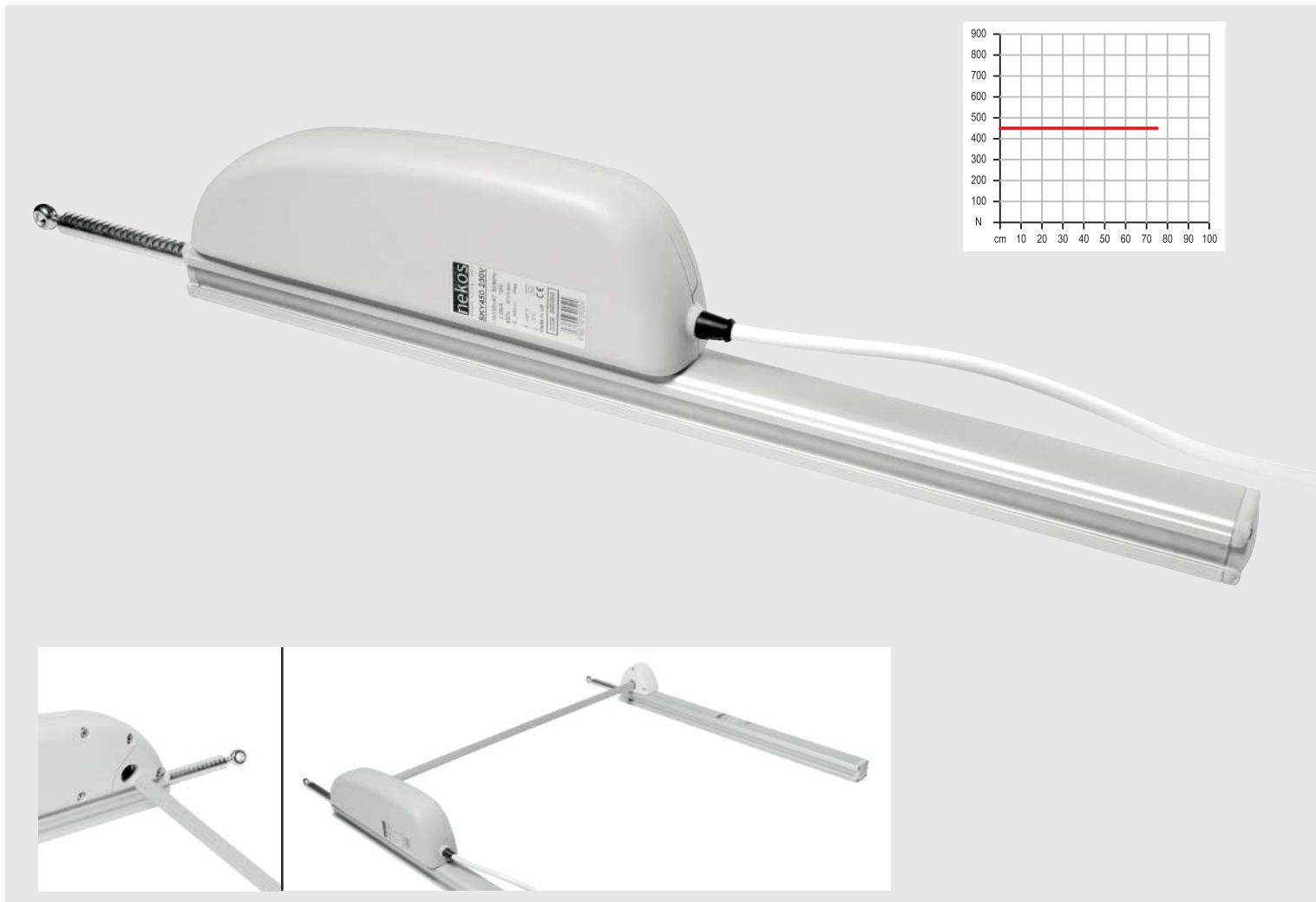
CODE	MODEL 230V
6270001	ROCK1 - 110-230V - 500N - Stroke 100 mm
6270002	ROCK2 - 110-230V - 500N - Stroke 200 mm
6270003	ROCK3 - 110-230V - 500N - Stroke 300 mm
CODE	MODEL 24V SYNCRO <sup>3</sup>
6275100	ROCK1 SY - 24V Syncro <sup>3</sup> - 500N - Stroke 100 mm
6275101	ROCK2 SY - 24V Syncro <sup>3</sup> - 500N - Stroke 200 mm
6275102	ROCK3 SY - 24V Syncro <sup>3</sup> - 500N - Stroke 300 mm

# SKY 450

## Gear rack actuator 450N

Designed based on the SKY family, it combines strength and versatility in a machine with a thrust and traction force of 450 N.

- The load-bearing structure is made from high-strength composite material (glass fibre-reinforced polyamide), with around section stainless steel gear rack.
- Thanks to the sliding clamp system, the actuator can be fixed anywhere along the entire length of the rod, even at the head and the support pivots to adjust to the rotation of the window. SKY 450 can be applied in tandem with a single rod for a second push point.
- Available strokes: 180, 230 mm for louvres and solar shading blades, 350, 550, 750 and 1000 mm for application on windows.



### APPLICATIONS

AWNING WINDOW  
ROOF WINDOWS  
DOMES and SKYLIGHT  
LOUVERS WINDOW  
SOLAR SHADING BLADES

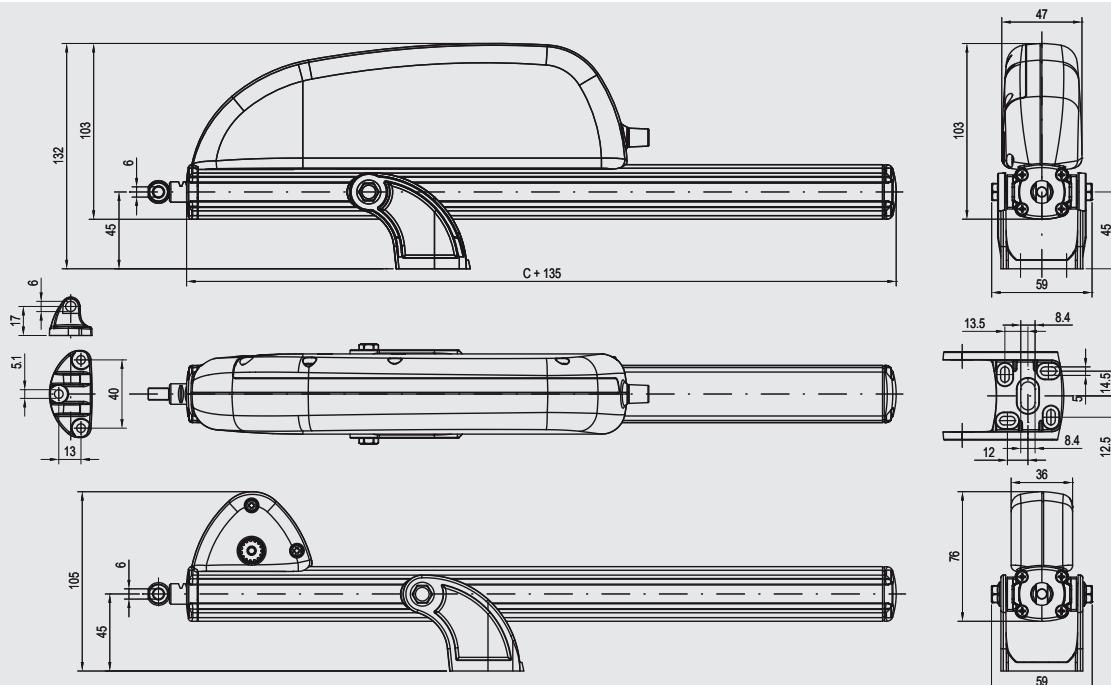
### TO BE USED WITH:

Actuator Rod  
Connection Bar  
KOUPLE 230V  
SERIE KH and SERIE KH-R  
RR2-M



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Linear gear rack actuator suitable for opening awning windows, dome rooflights and dormers.
- Thrust and traction power 450 N.
- One or two push points.
- Operates at 110-230V 50/60Hz.
- Opening and closing end-stroke with power absorption as electronic protection against overload.
- Can be connected in parallel.
- Supplied with a pivoting bracket that can be fixed along the entire length of the rod by means of two sliding clamps.
- Standard colours: Anodised Silver for the metal parts in extruded aluminium and Grey (similar to RAL7035) for the gearmotor housing. The power cable is always White.
- Complies with EU directives (EMC Directive, Low Voltage Directive).



### MODEL

### SKY 450 - 230V

Thrust and traction force	450 N
Strokes	180, 230, 350, 550, 750, 1000 mm
Power supply voltage	110-230V ~ 50/60 Hz
Current absorption at nominal load	0,28-0,19 A
Travel speed without load	21,6 W - 24W
No load speed	6,7/4,4 mm/s
Duration of no load stroke	In accordance with the stroke length
Electrical insulation	Class II
Type of service	2 cycles
Working temperature	-5°C - +65°C
Protection index for electrical devices	IP44

Soft Stop	NO
Relax function	YES
Adjustment of connection to window frame	At absorption of power
Connection in parallel	YES (max 20)
Length of power cable	1 m
Stroke-end at opening and closing	At absorption of power
Protection against overload	At absorption of power
Holding nominal force	2200N
Dimensions	103x47x (Stroke + 135) mm
Weight	Varies according to construction

CODE	MODEL
6221001	SKY 450 230V Stroke 180 mm
6221002	SKY 450 230V Stroke 230 mm
6221003	SKY 450 230V Stroke 350 mm
6221004	SKY 450 230V Stroke 550 mm
6221005	SKY 450 230V Stroke 750 mm
6221006	SKY 450 230V Stroke 1000 mm

CODE	MODEL
6291001	Actuator rod SKY 450 Stroke 180 mm
6291002	Actuator rod SKY 450 Stroke 230 mm
6291003	Actuator rod SKY 450 Stroke 350 mm
6291004	Actuator rod SKY 450 Stroke 550 mm
6291005	Actuator rod SKY 450 Stroke 750 mm
6291006	Actuator rod SKY 450 Stroke 1000 mm
4010009	Connection Bar 1 m
4010010	Connection Bar 1,5 m
4010011	Connection Bar 2 m
4010012	Connection Bar 2,5 m

# SKYRO 650

Gear rack  
actuator 650N

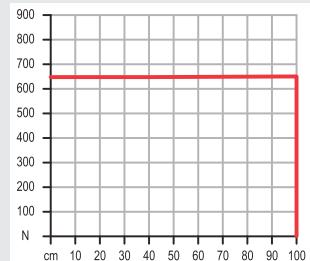


SKYRO 650 is the new rack actuator with Syncro<sup>3</sup> technology (Nekos patent).

It has a wide range of applications, thanks to its 650 N traction and thrust force, which is microprocessor-controlled and managed.

The new SKYRO actuator series is the result of Nekos' experience in providing robust, durable, easy-to-install and cost-effective products.

- The application is versatile and modular. It is possible to install several motors in Syncro<sup>3</sup> version on the same window or to employ idle thrust points, connected by a connection bar.
- The most frequent applications are automation of domes, large skylights, Shed windows, rooflights, sunshade blades and battery-awning windows. IP65 protection degree.
- Available strokes: 180, 230 mm for louvres and solar shading blades, 350, 550, 750 and 1000 mm for application on windows.
- The actuator is fixed by means of a clamp system along the entire length of the shaft and with a swinging support that allows the actuator to follow the opening radius of the window frame.



## PATENTED

EP2770385



## APPLICATIONS

AWNING WINDOW  
ROOF WINDOWS  
DOMES and SKYLIGHT  
LOUVERS WINDOW  
SOLAR SHADING BLADES

## TO BE USED WITH:

SKYRO 650 230V and SKYRO 650 230V Syncro<sup>3</sup>:  
SERIE KH and SERIE KH-R  
RR2-M

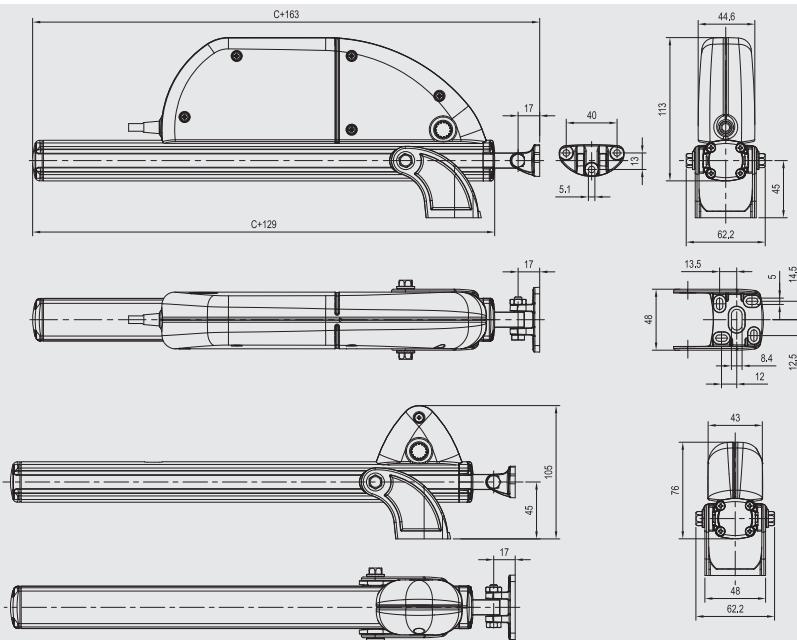
SKYRO 650 24V Syncro<sup>3</sup>:  
SERIE KL and SERIE KL-R  
MODIX 2/4/6  
K-LOCK  
AUX

# SKYRO 650 Syncro<sup>3</sup>

Gear rack actuator  
650 N - Syncro<sup>3</sup>

## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Linear gear rack actuator suitable for opening domes, awning windows and rooflights.
- Thrust and traction force of 650 N.
- Operates at 110-230V~ 50/60Hz or 24V DC.
- Application of several thrust points on the same window with Syncro<sup>3</sup> actuators and idle thrust points.
- Power absorption limit switch while opening and closing and acting as electronic overload protection.
- Can be synchronized with other actuators and parallel connected.
- Supplied with a universal pivoting bracket, which can be fixed along the entire length of the rod by means of two sliding clamps.
- Standard colours: silver Anodised for the metal parts in extruded aluminium, grey (RAL7047) for the gearmotor. White power cable.
- Complies with EU directives (EMC directives, Low Voltage Directive).



MODEL SKYRO 650	230V	24V
Thrust and traction force	650 N	
Strokes	(180,230) - 350,550,750,1000 mm	
Power supply voltage	110-230V ~ (AC)	24V DC
Current absorption at nominal load	0,37 A / 0,18 A	1,0 A
Power absorption at nominal load	28 W / 24 W	24 W
Average speed	7 mm/s	
Breaking current	-	1,20 A
End stroke stop	At absorption of power	
Stroke travel duration at max. load	In accordance with the stroke length	
Duration of the ramp (start and stop)	1 s	
Electrical insulation	Class II	Class III (SELV)
Type of service	2 cycles	5 cycles
Working temperature	-20°C - +70°C	

Protection index for electrical devices	IP65
Soft Stop	YES
Relax function	YES
Syncro <sup>3</sup> synchronization	YES (max. 4) YES (max. 8)
Connection in parallel	YES (max. 20)
Length of power cable	2 m
Stroke-end at opening	At absorption of power
Stroke-end at closing	At absorption of power
Protection against overload	At absorption of power
Holding nominal force	3000 N
Dimensions	44,6x113x (Stroke + 163) mm
Weight (without brackets)	230V→1,40/1,45/1,65/2,34/2,69/3,11 Kg 24V→1,70/1,75/1,95/2,29/2,64/3,07 Kg

CODE	MODEL 24V - SYNCRO <sup>3</sup>
6230501	SKYRO 650 Syncro <sup>3</sup> 24V – Stroke 180 mm
6230502	SKYRO 650 Syncro <sup>3</sup> 24V – Stroke 230 mm
6230503	SKYRO 650 Syncro <sup>3</sup> 24V – Stroke 350 mm
6230504	SKYRO 650 Syncro <sup>3</sup> 24V – Stroke 550 mm
6230505	SKYRO 650 Syncro <sup>3</sup> 24V – Stroke 750 mm
6230506	SKYRO 650 Syncro <sup>3</sup> 24V – Stroke 1000 mm

6290061	Actuator rod SKYRO 650 Stroke 180 mm
6290062	Actuator rod SKYRO 650 Stroke 230 mm
6290063	Actuator rod SKYRO 650 Stroke 350 mm
6290064	Actuator rod SKYRO 650 Stroke 550 mm

CODE	MODEL 230V - SOLO
6220101	SKYRO 650 110-230V~ Stroke 180 mm
6220102	SKYRO 650 110-230V~ Stroke 230 mm
6220103	SKYRO 650 110-230V~ Stroke 350 mm
6220104	SKYRO 650 110-230V~ Stroke 550 mm
6220105	SKYRO 650 110-230V~ Stroke 750 mm
6220106	SKYRO 650 110-230V~ Stroke 1000 mm

6290065	Actuator rod SKYRO 650 Stroke 750 mm
6290066	Actuator rod SKYRO 650 Stroke 1000 mm

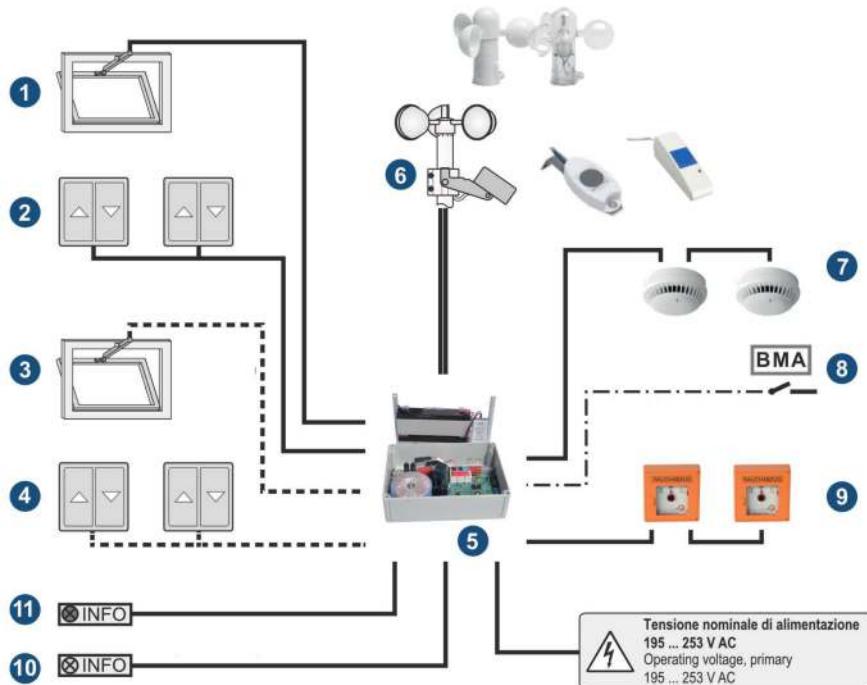
CODE	MODEL 230V - SYNCRO <sup>3</sup>
6220501	SKYRO 650 110-230V~ Stroke 180 mm
6220502	SKYRO 650 110-230V~ Stroke 230 mm
6220503	SKYRO 650 110-230V~ Stroke 350 mm
6220504	SKYRO 650 110-230V~ Stroke 550 mm
6220505	SKYRO 650 110-230V~ Stroke 750 mm
6220506	SKYRO 650 110-230V~ Stroke 1000 mm

4010009	Connection Bar 1 m
4010010	Connection Bar 1,5 m
4010011	Connection Bar 2 m
4010012	Connection Bar 2,5 m

# SMOKE AND HEAT EXTRACTION SYSTEMS (SHEV-RWA)



# Smoke and Heat Extraction



## LEGEND

- 1 Output for drive line 1, 24 V DC for smoke and heat exhausting and natural ventilation
- 2 Input for ventilation line 1
- 3 Output for drive line 2
- 4 Input for ventilation line 2
- 5 FV3 and FV6 SHEV Control unit
- 6 Connections for wind and rain sensor (disabled in case of alarm and power loss) V1/V'LUX and NRS1/RAIN102H
- 7 Input for smoke detectors RM3000 and TH4860
- 8 Input for signal from external fire alarm system (alternative connection to smoke detectors)
- 9 Input for break-glass units HE082 - HE081
- 10 Output for signal transduction (alarm release)
- 11 Output for signal transduction (collective fault)

## PRE SALES service:

- Application study with **opening simulation**
- Folding arm actuators **parameterization**
- **Analysis of the SHEV plant layout** to determine the type, size and number of control units required

The smoke and heat extraction system belongs to the area of building safety. Many lives can be saved in the event of an emergency through the installation of the FV-3 and FV-6 Series control units, hence the use has become required by law in many European countries. The authorities issue a permit that determines the way in which these conditions are adopted. Before installation of the smoke and heat extraction system, it must be demonstrated that the system meets the official requirements.

# FV-3 and FV-6 |

**SHEV  
control  
units**



These compact control units were developed in accordance with European standard EN 12101 part 9 and 10.

Openings for the extraction of smoke in the upper part of the building and a sufficient number of fresh air intakes in the lower areas, combined with the use of these control units, allow smoke, gas and heat to be extracted naturally, enabling people still present in the building to abandon it through a low-smoke zone. In the meantime, fire fighters can deal with the fire and the rescue services can evacuate the people safely.

- The heart of system is the compact FV-3 (output 3 A) and/or FV-6 (output 6 A) control panel: it was developed in accordance with standard EN 12101 Part 9 and 10.
  - The panel includes a primary and secondary power supply, as well as all the control technology for the functioning of 24V DC actuators installed.
- The control unit activates the actuators for daily ventilation and in the event of fire.

- The control units include special ventilation functions (limited ventilation, deadman switch, automatic ventilation) that can be programmed individually by the user.
- In the event of a power failure, the emergency power supply with lead/acid batteries keeps the smoke and heat extraction system in operation for at least 72 hours.

For further details and technical information, please refer to our technical service.



## M-SHEV

Modular units available on request, up to a max. of 96A

### MODEL FV

Power supply voltage

### FV-3

230V ~ 50/60Hz

Output tension

24V DC

Maximum current load

3,0 A- 6,0 A

Emergency supply

Lead-acid battery 2,3 Ah

Housing

Plastic container (RAL7035)

Emergency power supply

In compliance with EN 12101-10

Protection class

IP66

Duration of operability in the event of a power failure

Up to 72 hours

LED signals

Ready, Defect, Alarm

Operating temperature

-5°C - +40°C

Monitoring cable

Actuators, emergency switch, smoke sensors  
and fire alarm system contact

Connections (emergency switches)

7 main and max 1 local unit, ventilation switches, heat sensor, smoke sensor,  
wind and rain sensors, fire alarm signal

Signaling contact

2 neutral contact programmable with dip-switches, maximum 30 VDC, 2 A

Case dimensions

254x180x111 mm

361x254x111 mm

Weight

4,4 Kg

6,4 Kg

## APPLICATIONS

SMOKE and HEAT  
EXTRACTION  
SYSTEMS (RWA/SHEV)

## TO BE USED WITH:

KATO 305 RWA  
INKA 356 RWA  
PA-L  
PA-L/S  
PA-KL<sup>2</sup>  
PA-KL<sup>2</sup>-DF  
SHEV Accessories

CODE	MODEL
7505507	FV3 SHEV Central Unit 3A output
7505508	FV6 SHEV Central Unit 6A output



## ACCESSORIES FOR SMOKE AND HEAT EXTRACTION



### HE082 | Primary emergency button

- A primary manual button for activating fire alarms to the SHEV control unit.
- Power supply from control unit.
  - LED display on the control unit, Emergency (red), Normal (green) and Error (yellow).
  - Dimensions 125x125x36 mm
  - IP42 protection rating.
  - Orange plastic body.



### HE081 | Secondary emergency button

- A secondary manual button for activating fire alarms to the SHEV control unit without an LED control unit status indicator.
- Power Supply from control unit.
  - LED display on the control unit, Emergency (red), Normal (green) and Error (yellow).
  - Dimensions 125x125x36 mm.
  - IP42 protection rating.
  - Orange plastic body.



### RM3000 | Smoke detector

- A smoke detector for sending the alarm signal to the SHEV alarm control unit.
- Control of interference to avoid false alarms.
  - Alarm with red LED.
  - Operating Voltage: 9 - 33V DC.
  - Safety alarm: 100 µA - 20 mA.
  - Dimensions Ø100x44 mm.
  - IP43 protection rating.
  - Compliant with standard EN 54-7.



### TH-4860 | Heat detector

- A heat detector for sending the fire alarm signal to the SHEV alarm control unit.
- Control of interference to avoid false alarms.
  - LED signals: Alarm (red), Error (yellow).
  - Operating Voltage: 9 - 33V DC.
  - Safety alarm: 100 µA - 20 mA.
  - Dimensions Ø100x40 mm.
  - IP43 protection rating.
  - Compliant with standard EN 54-5.

**TO BE USED  
WITH:**

FV-3 and FV-6

CODE	MODEL
7505018	HE082 Primary emergency button
7505020	HE081 Secondary emergency button
7505019	RM3000 Smoke detector
7505023	TH-4860 Heat detector

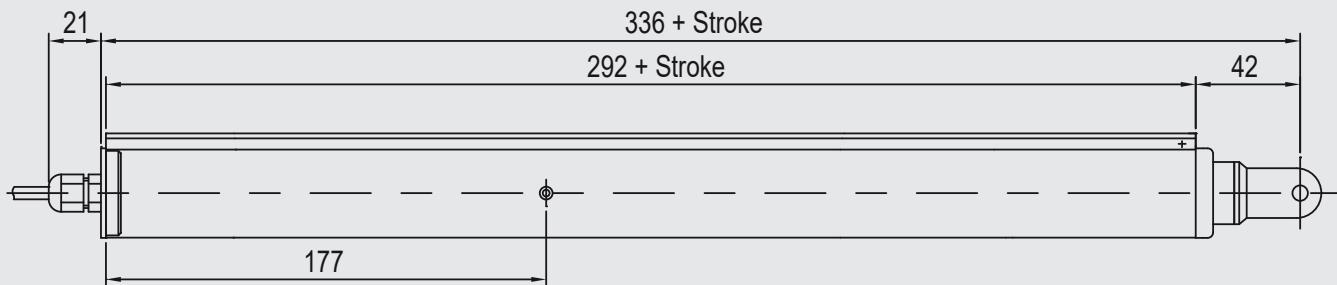
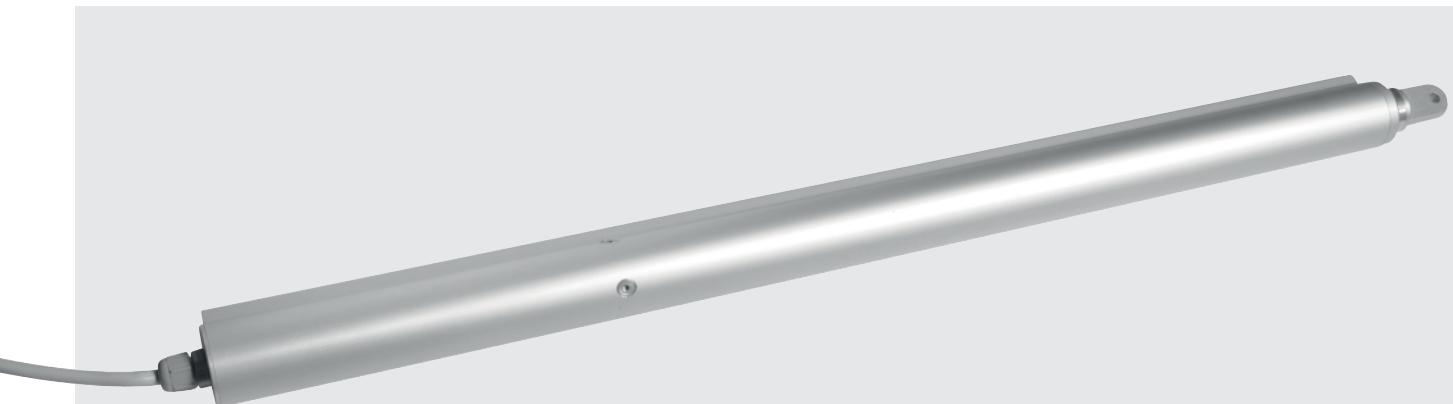
# PA-L

## Linear actuator with rigid rod 24V 500N, 750N and 1000N



This actuator with a rigid rod offers multiple application options. Within the range of standard actuators, it is distinguished by exclusive characteristics that enhance its sales and make its application as simple as possible.

- Resistance to high temperatures and permanent loads, and other quality characteristics in accordance with standard DIN EN 12101/2, are included as a rule.
- Support brackets must be ordered separately.



MODEL PA-L	500	750	1000
Thrust and traction force	500 N	750 N	1000 N
Strokes	500, 750 mm		
Power supply voltage	24V (DC)		
Current absorbed at nominal load	< 1,40 A		
No-load / load speed	4,5/8,5 mm/s		

Electrical insulation	Class III
Working temperature	-5°C - +75°C
Protection index for electrical devices	IP54
Synchronisation function	YES (max 4)

### APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
ROOF WINDOW  
LOUVERS WINDOW  
SOLAR SHADING BLADES

### TO BE USED WITH:

SERIE KL and SERIE KL-R  
FV-3 and FV-6  
MODIX 2/4/6

CODE	MODEL
6260002	PA-L 500N stroke 500 mm
6260003	PA-L 500N stroke 750 mm
6260006	PA-L 750N stroke 500 mm
6260007	PA-L 750N stroke 750 mm
6260010	PA-L 1000N stroke 500 mm
6260011	PA-L 1000N stroke 750 mm

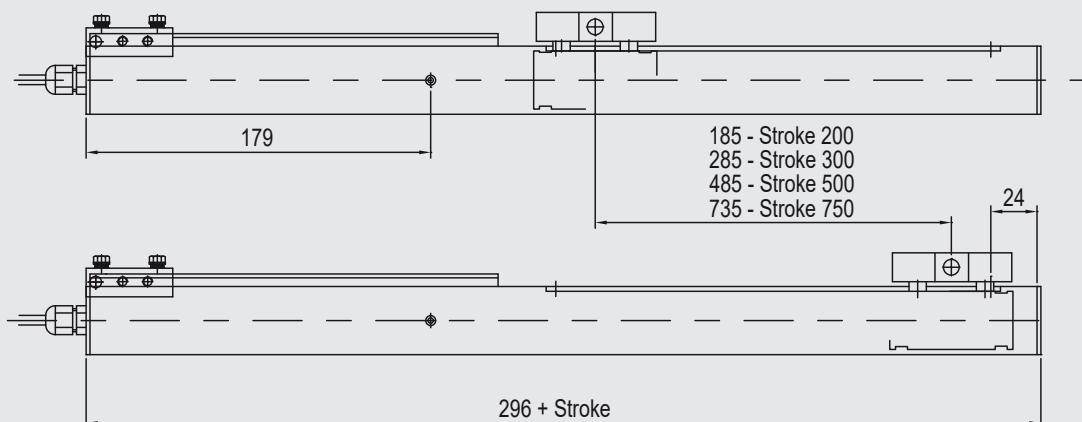
# PA-L/S

## Lateral sliding pivot actuator - 500N



The lateral sliding pivot actuator, with its patent-protected mobile mechanism, defines new standards in the sector of electrically operated windows, with opening towards the inside and now also towards the outside.

- Ideal for mounting on the side of the window (right / left), also in pairs.
- Very wide opening angles can be obtained with short strokes.
- The integrated electronics provides protection from overload and electronic torque balancing by comparing current consumption in relation to the increase in force.
- The lateral sliding pivot actuator is certified for SHEV systems in accordance with standard EN 12101-2.



MODEL	PA-L/S - 24V	
Thrust and traction force	500 N	
Strokes	185, 285, 485, 735 mm	
Power supply voltage	24V (DC)	
Current absorbed at nominal load	< 1 A	
No-load speed	8,4 mm/s	
Electrical insulation	Class III	
Working temperature	-5°C - +75°C	
Protection index for electrical devices	IP20	
Synchronisation function	YES (max 4)	
Dimensions	see instruction manual	
Weight	about 3 kg	

### APPLICATIONS

AWNING WINDOW  
HOPPER WINDOW  
DOMES and SKYLIGHT

### TO BE USED WITH:

SERIE KL and SERIE KL-R  
FV-3 and FV-6  
MODIX 2/4/6

CODE	MODEL
6275200	PA-L/S Linear actuator 500N side stroke 200 mm
6275201	PA-L/S Linear actuator 500N side stroke 300 mm
6275202	PA-L/S Linear actuator 500N side stroke 500 mm
6275203	PA-L/S Linear actuator 500N side stroke 750 mm

# PA-KL<sup>2</sup>

## Folding arm actuator 500N, 800N and 1000N



PA-KL<sup>2</sup> is an extraordinary and innovative development for applications on windows. The technology applied to these actuators, characterised by power and style, is unique on the market and offers numerous different applications.

- The possibility of very wide opening angles and high resistance to variable loads (i.e. due to wind).
- Product certified for smoke and heat extraction systems (SHEV) in accordance with standard EN 12101-2.
- Compact dimensions and attractive looks thanks to its symmetrical design.
- High performance mechanism (>20,000 cycles); Synchronised version available.
- Wide range of brackets that allows flexible installations in the centre and on the side of the frame.
- Low power consumption and high output.
- Support brackets must be ordered separately.


**MODEL PA-KL<sup>2</sup>**

	<b>500 N</b>	<b>800 N</b>	<b>1000 N</b>
Thrust and traction force	500 N	800 N	1000 N
Stroke		530 - 710 mm	
Power supply voltage		24V (DC)	
Power absorption	2 A	2,6 A	3 A
No load speed		14 mm/s	
Electrical insulation		Class III	
Working temperature		0°C - +75°C	
Protection index for electrical devices		IP54	
Synchronisation function		YES (max. 4)	
Length of power cable		3 m with connector	
Dimensions		stroke 530 mm → 409x58x164 mm 710 mm → 501x58x164 mm	
Weight		stroke 530 mm → 4,1 Kg 710 mm → 4,6 ÷ 5,5 Kg	

**APPLICATIONS**

AWNING WINDOW  
HOPPER WINDOW  
DOMES and SKYLIGHTS  
LOUVERS WINDOW

**TO BE USED WITH:**

SERIE KL and SERIE KL-R  
FV-3 and FV-6  
M-SHEV Modular units  
MODIX 2/4/6

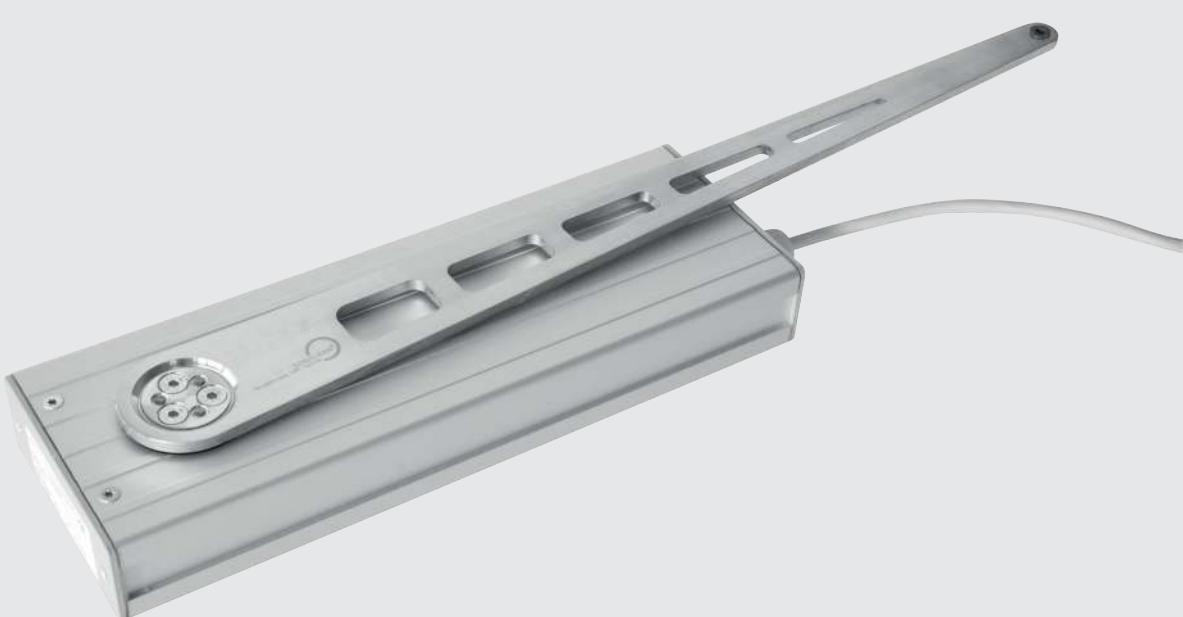
# PA-KL<sup>2</sup>-DF

**Rotary arm actuator 500N**



PA-KL<sup>2</sup>-DF rotary arm actuator completes the family of arm actuators, with the addition of some special features for doors and windows. Thanks to the special mounting brackets, which can be adjusted during installation, the rotary arm allows openings of up to 140° without interference. Each actuator has a power of 500 N. The benefits include:

- Highly resistant to load variations (e.g. wind speed).
- The possibility of very wide opening angles.
- Product certified for smoke and heat extraction systems (SHEV) in accordance with standard EN 12101-2.
- High performance mechanism (>20,000 cycles); Synchronised version available.
- Compact installation space.
- Various customisations thanks to the dedicated software.
- Low power consumption and high output.
- **PA-KL<sup>2</sup>-DF-K** model: short version of PA-KL<sup>2</sup>-DF arm actuator.



## MODELLO

Thrust and traction force

## PA-KL<sup>2</sup>-DF

## PA-KL<sup>2</sup>-DF-K

400 N

Opening angle

140°

Power supply voltage

24V (DC)

Power absorption

1,5 A

1,1 A

Opening speed

2,8°/s

Working temperature

0°C - +75°C

Protection index for electrical devices

IP54

Length of power cable

3 m with connector

Synchronisation function

YES (max. 4)

Dimensions

568 x 58 x 118 mm

368 x 58 x 118 mm

Weight

4,1 Kg

3,6 Kg

## APPLICATIONS

CASEMENT WINDOW

## TO BE USED WITH:

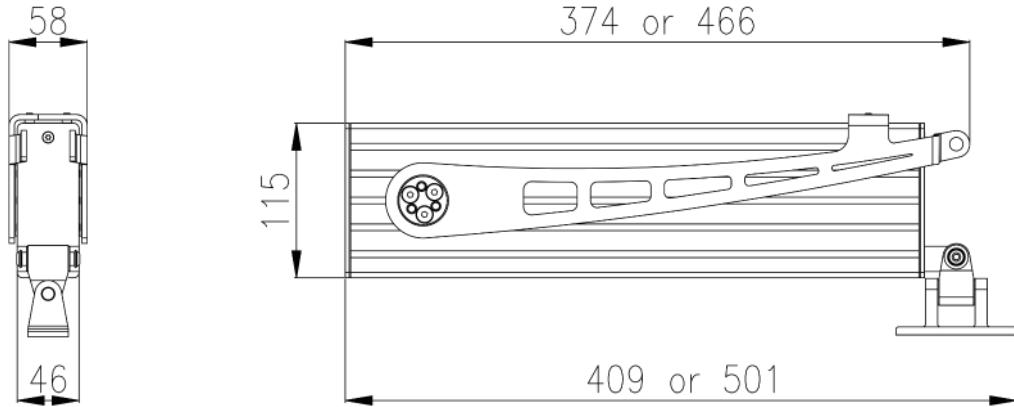
SERIE KL and SERIE KL-R

FV-3 and FV-6

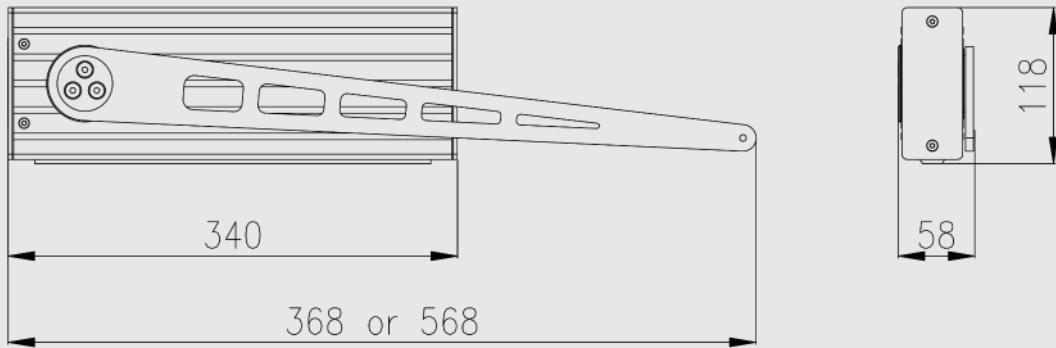
M-SHEV Modular units

MODIX 2/4/6

## PA-KL<sup>2</sup>-530 / PA-KL<sup>2</sup>-710



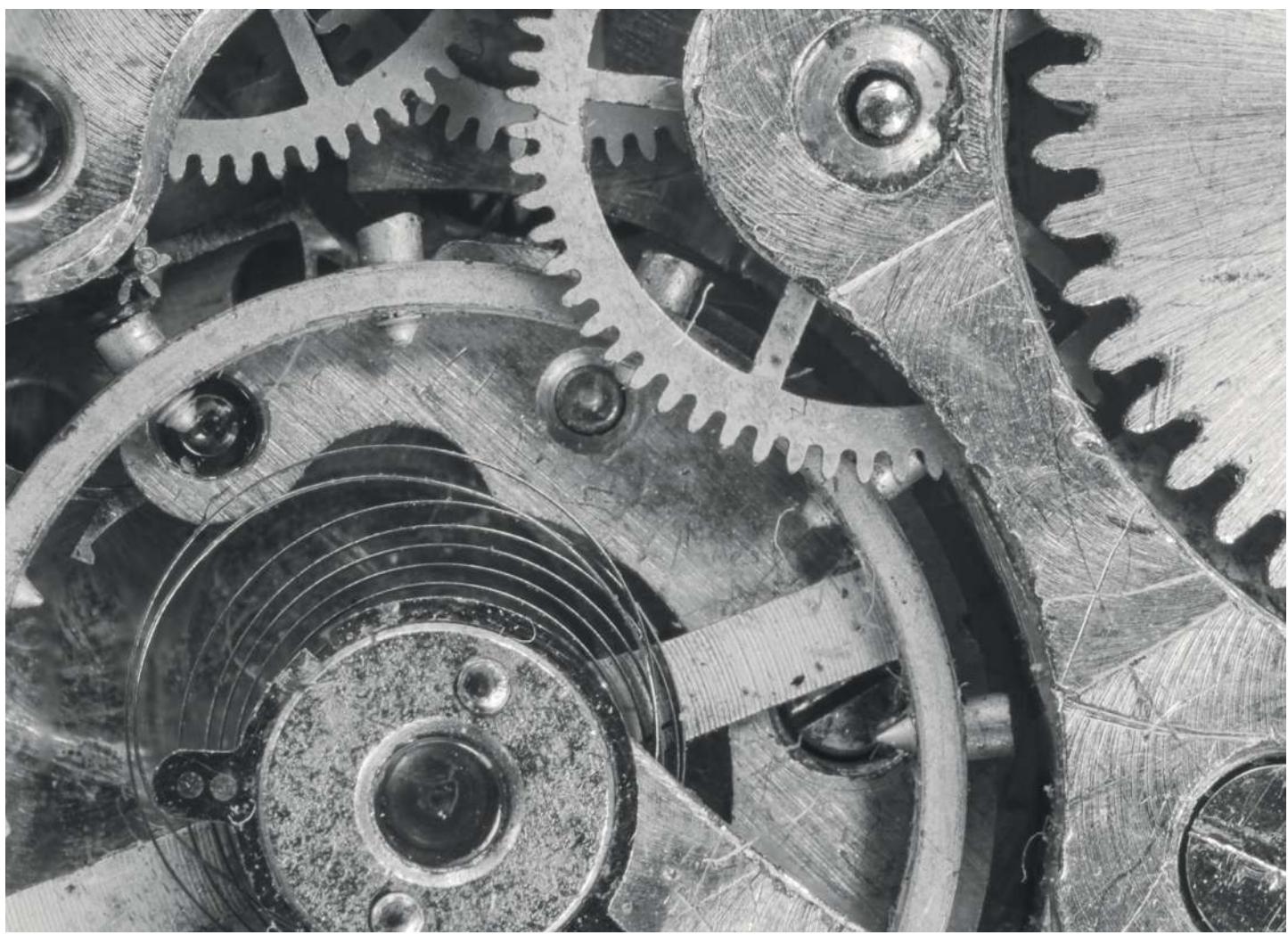
## PA-KL<sup>2</sup>-DF / PA-KL<sup>2</sup>-DF-K



CODE	MODEL
6310002.1	PA-KL <sup>2</sup> Folding arm actuator 500N stroke 710 mm
6310004.1	PA-KL <sup>2</sup> Folding arm actuator 800N stroke 710 mm
6310006.1	PA-KL <sup>2</sup> Folding arm actuator 1000N stroke 710 mm

CODE	MODEL
6310007.1	PA-KL <sup>2</sup> -DF Folding arm actuator for casement window
6310008.1	PA-KL <sup>2</sup> -DF-K Folding arm actuator for casement window (short)

# GEARMOTORS

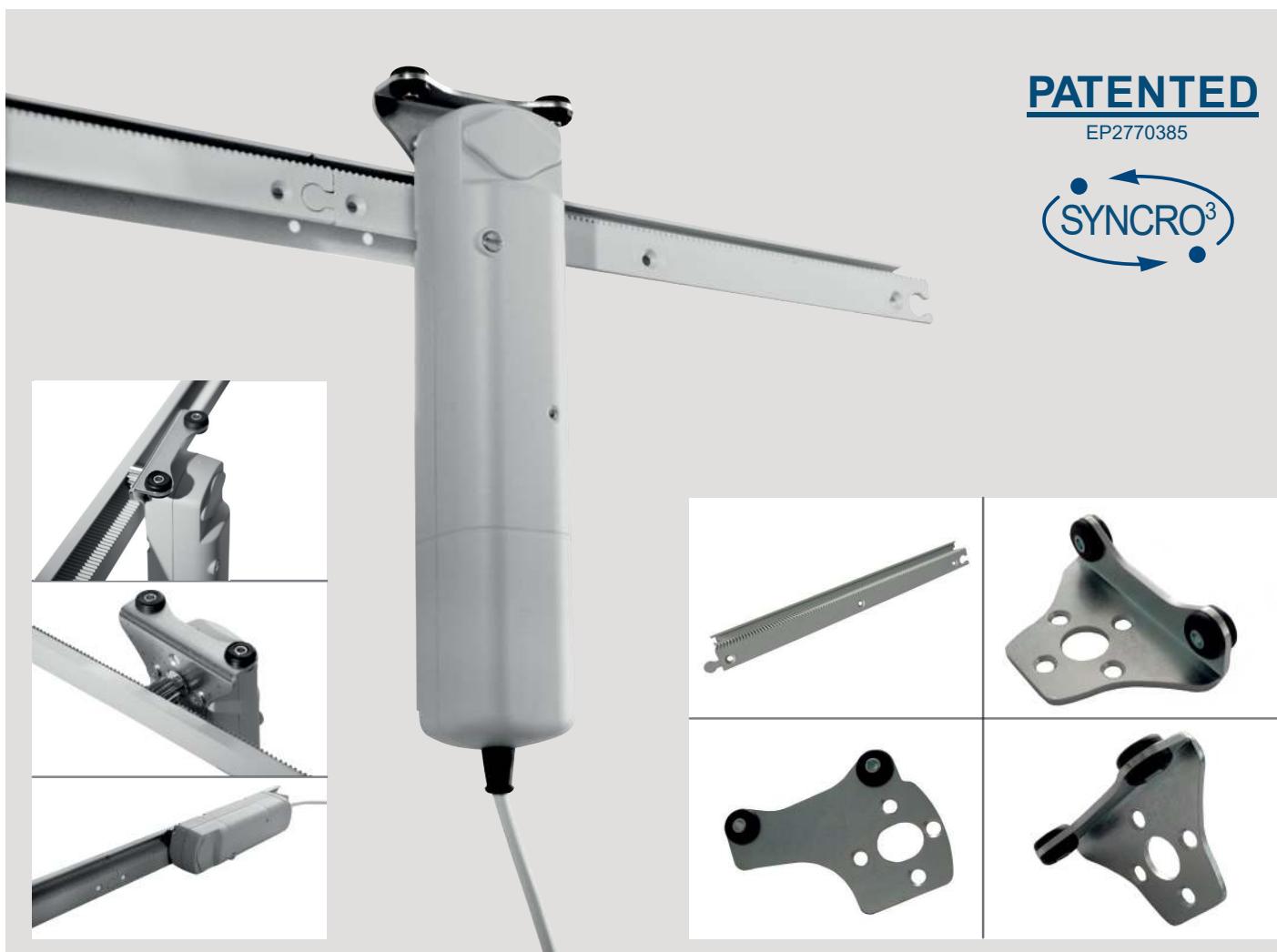


# FLIK

## Automation for sliding doors, windows verandas and railings

FLIK is an electric automation for sliding doors (also telescopic), windows, shutters, and railings that are not intended for intensive use or as escape routes. The product is ideal for installation on secondary access, it's easy to install and to operate and can also be controlled via radio.

- No external control unit. Visible or concealed installation, small dimensions and pleasant design: the gearmotor shall be installed in the upper part of the window frame, both in case of sliding sash with upper rail and with hidden carriages on the floor; no more belts, drive pulleys, adjustments, maintenance are needed.
- The new FLIK system by Nekos for sliding doors and windows uses a small rack, that is simple and quick to assemble and without any need for calibration. Just the limit switches shall be set in the gear motor and the game is done.
- The system provides the possibility to operate several sashes in the same door/window, to move them in a synchronized way respecting the closing times, to coordinate sashes with different width (function to be required while ordering) but also to interface with burglar-proof electro locks. FLIK is very silent, only 45 dB(A).
- FLIK can be synchronised when mounted on opposite or telescopic sashes (Nekos Syncro<sup>3</sup> patent).



### APPLICATIONS

SLIDER WINDOW / DOOR:

SLIDING SHUTTERS AND VERANDAS  
RAILINGS  
MOVABLE PARTITION WALLS

### TO BE USED WITH:

#### FLIK 24V:

SERIE KL and SERIE KL-R  
MODIX 2/4/6  
K-LOCK

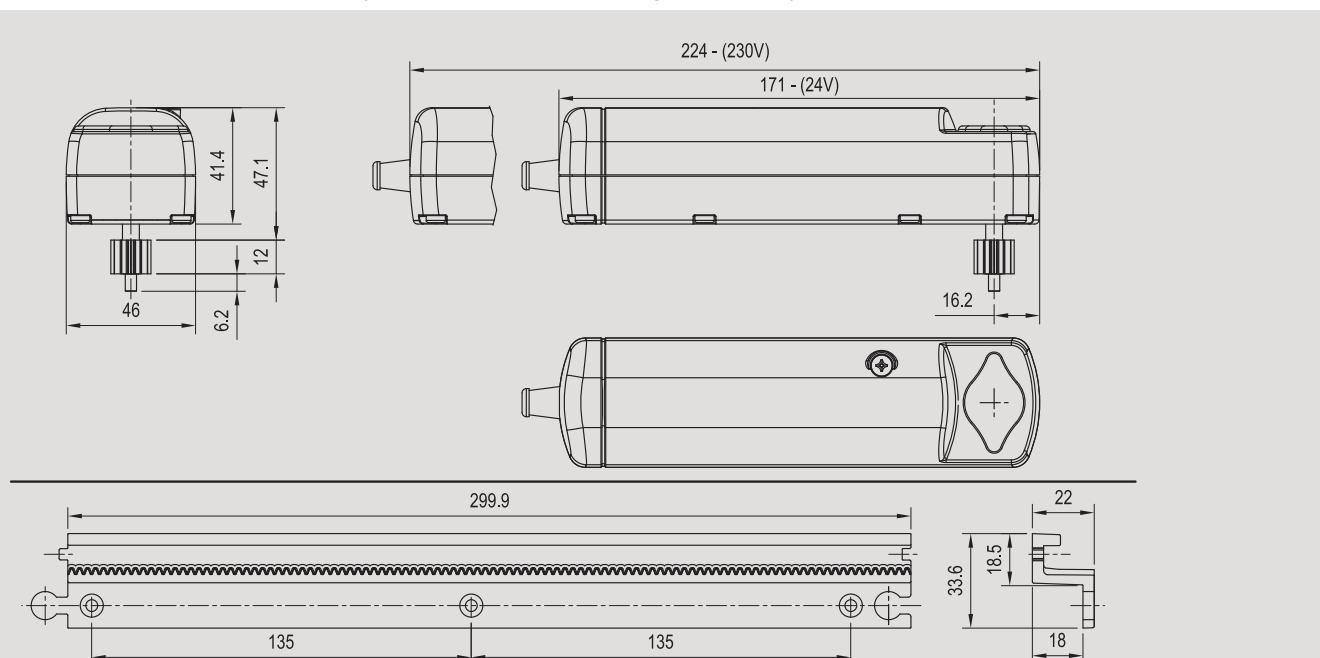
#### FLIK 230V:

SERIE KH and SERIE KH-R  
RR2-M



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Electric automation for domestic use combined with rack for the movement of sliding doors, windows, shutters and railings.
- Body structure in high resistance composite material (Pa6+35%GF).
- Maximum weight of the sash to be moved on standard carriages: 4000 N.
- Projected to work with at low voltage of 24V DC or at 110-230V~(AC), 50/60Hz.
- Operating the shutters without opening the window; just a simple click of the button or of the remote control needed.
- Programmable electronic limit switch with external magnetic system. Low travel speed.
- Equipped with overload safety protection, start and finish ramp, Soft Stop function.
- Synchronized device (Nekos Syncro<sup>3</sup> patent) of two or more FLIK or K-LOCK electric lock, movement of several sashes on the same window.
- Motion irreversibility: to assure an increased burglar-proof resistance it can be combined with the K-LOCK electro lock.
- Supplied complete with tilting support brackets. 3-wire 24V and 230V cable.
- Tested according to life test under the EN 12400 standard.
- Complies with the relevant EU Directives (EMC Directives, Low Voltage Directives).



MODEL FLIK	230V	24V
Travel force	100 N	120 N
Stroke	max 4 m	
Power supply voltage	110-230V~50/60 Hz	24 V DC
Current absorbed at nominal load	0,32 / 0,22 A	0,95 A
Power absorbed at nominal load	27 / 29 W	23 W
Electrical insulation	Class II	Class III
Average speed	45 mm/s	
Max sash weight	4.000 N	
Max. sash width	4 m	
Anti-crush stop force	100 N	
Duration of the ramp (start and stop)	200 mm	
Type of service	2 cycles	5 cycles

Working temperature	-20°C - +70°C
Protection index for electrical devices	IP42
Stroke-end stop	Electronic with magnetic selector
RADIO control: PIK model	YES - Remote control at 433,32 MHz
Connection in parallel	YES
Combined with: K-LOCK and AUX accessory unit	NO YES
Synchronization (Syncro <sup>3</sup> patent)	NO YES (max 8)
Length of power cable	2 m
No. of test cycles - Standard EN12400 (2004)	20.000
Unlocking device	YES - Accessory on request
Dimension	220x46x41 mm 175x46x41 mm
Weight	0,313 Kg 0,295 Kg

CODE	MODEL 230V
6410003	FLIK Motoreducer 110-230V~ with end shaft version for release
6410004	FLIK Motoreducer 110-230V~ RADIO with end shaft version for release
CODE	MODEL 24V
6450003	FLIK Motoreducer 24V DC Syncro <sup>3</sup> with end shaft version for release
6450004	FLIK Motoreducer 24V DC - RADIO with end shaft version for release
4010126	Rack FLIK 300 mm

# MR28-B | Tubular gear motor

Tubular motor for roller and panel blinds. An evolution in the concept of style, practicality, compactness and technology.

The summary of an innovative technology in your hand, an invisible and practical control solution on your blinds.

A new electronic technology for controlling the position and run (up to 20 metres of winding).

- Stroke-end determination is fast, simple and immediate; all you need is a screwdriver. MR28-B has a visible front panel for checking the LED indicator and to facilitate programming of the stroke end and it is only 210 mm in length (approx. 1/3 less than similar commercially available products).
- In addition, installation is easy thanks to the universal brackets that can be placed in any position.
- It is strong, solid and built to last over time; the motor has been subjected to exhausting duration tests with a positive outcome.
- Finally, it can be connected to light sensors for automatic control of the living environment.



## APPLICATIONS

VENETIAN BLINDS  
ROLLER BLINDS  
PANEL BLINDS

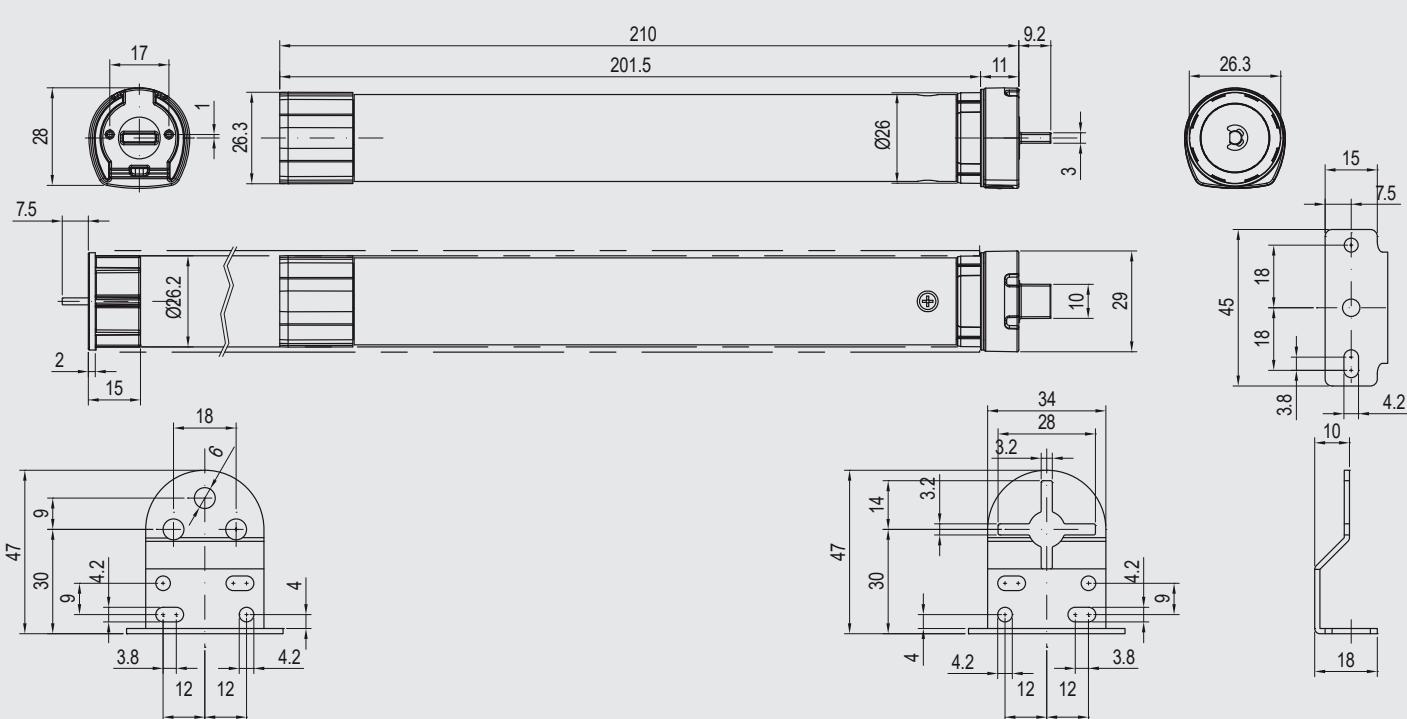
## TO BE USED WITH:

ALI' SW  
SERIE KL and SERIE KL-R  
MODIX 2/4/6



## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Ø24 tubular gear motor for opening and closing roller and panel blinds on a Ø28 tube, manufactured in accordance with the specifications given in the technical data table, operates at 24V DC Safety ELV (SELV).
- Theoretical capacity of 5,5 kg at Ø28.
- Stroke-end control with electronic system that can be programmed at any time.
- Complete with universal mounting brackets and an adaptor for a Ø28 tube (interior Ø26.5).
- Black anodised finish on visible parts.
- Complies with EU directives (EMC Directive, Low Voltage Directive).



MODEL	MR28-B - 24V
Traction force	0,70 Nm
Theoretical capacity load on tube Ø28	5,5 Kg
Limit switches maximum programming height	20 m
Voltage supply	24V DC
Current absorption at nominal load	0,340 A
Speed at nominal charge (at nominal load)	24 rpm
Speed during descent	32 rpm
Electrical insulation	Class III

Type of service	5 cycles
Working temperature	-5°C - +65°C
Protection index for electrical devices	IP44
End stroke	by Encoder
Connection in parallel of two or more motors	YES (max. 20)
Motor dimensions	Ø24,5 x 210 mm
Number of pieces per package	6 pieces
Weight (including accessories)	0,282 Kg

CODE 6140010 MODEL Tubular Gear Motor MR28-B 24V

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cUL US PTV

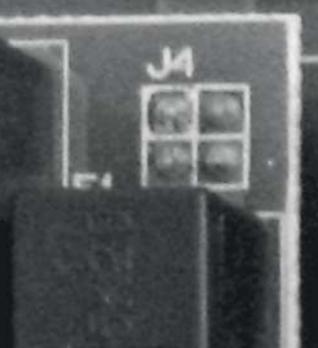
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12A 125VAC 7A 250

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12A 125VAC

7A 250

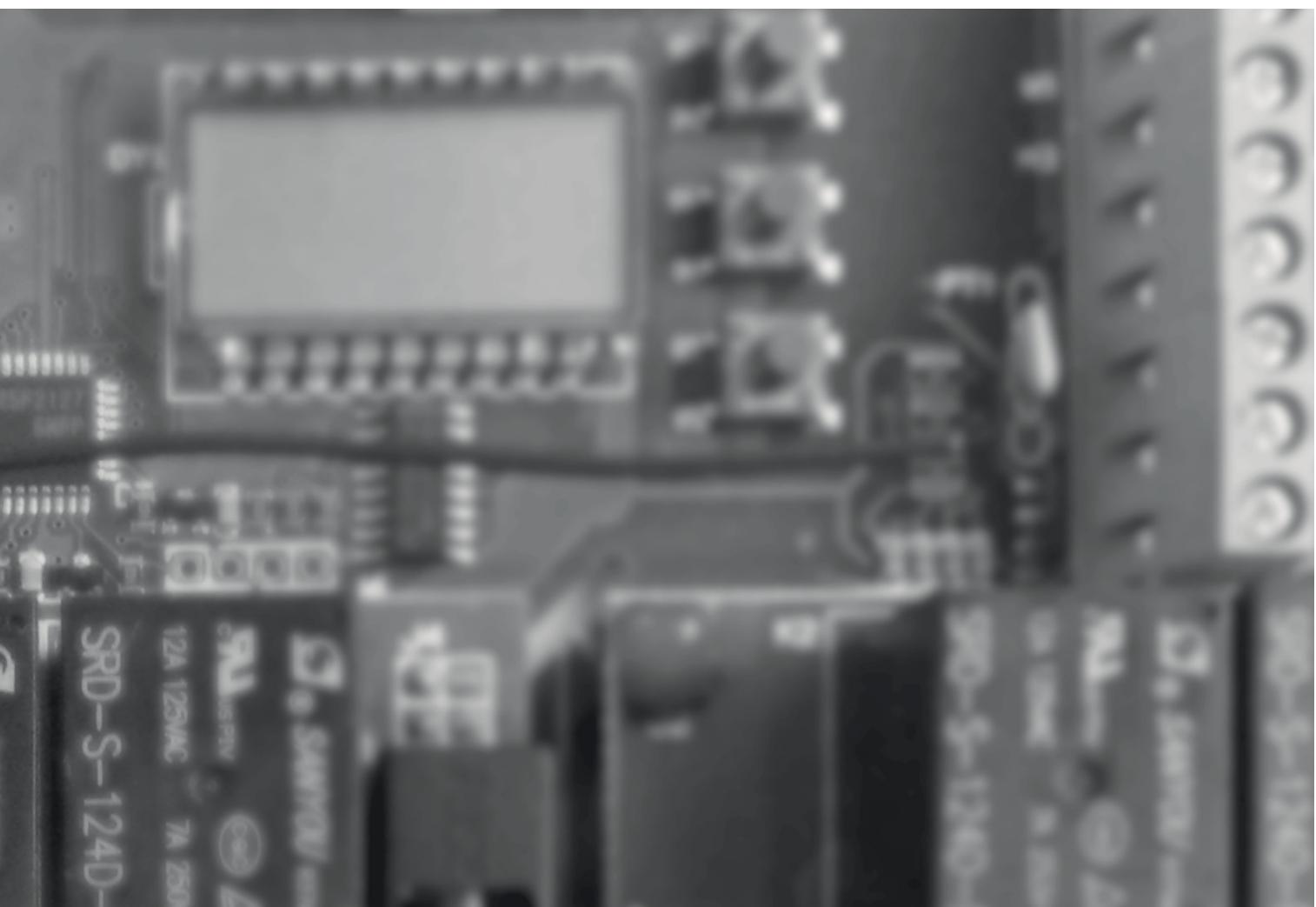
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# CENTRAL UNITS

Natural Ventilation, Atmospheric Control,  
Solar Technology, Retractable Stair

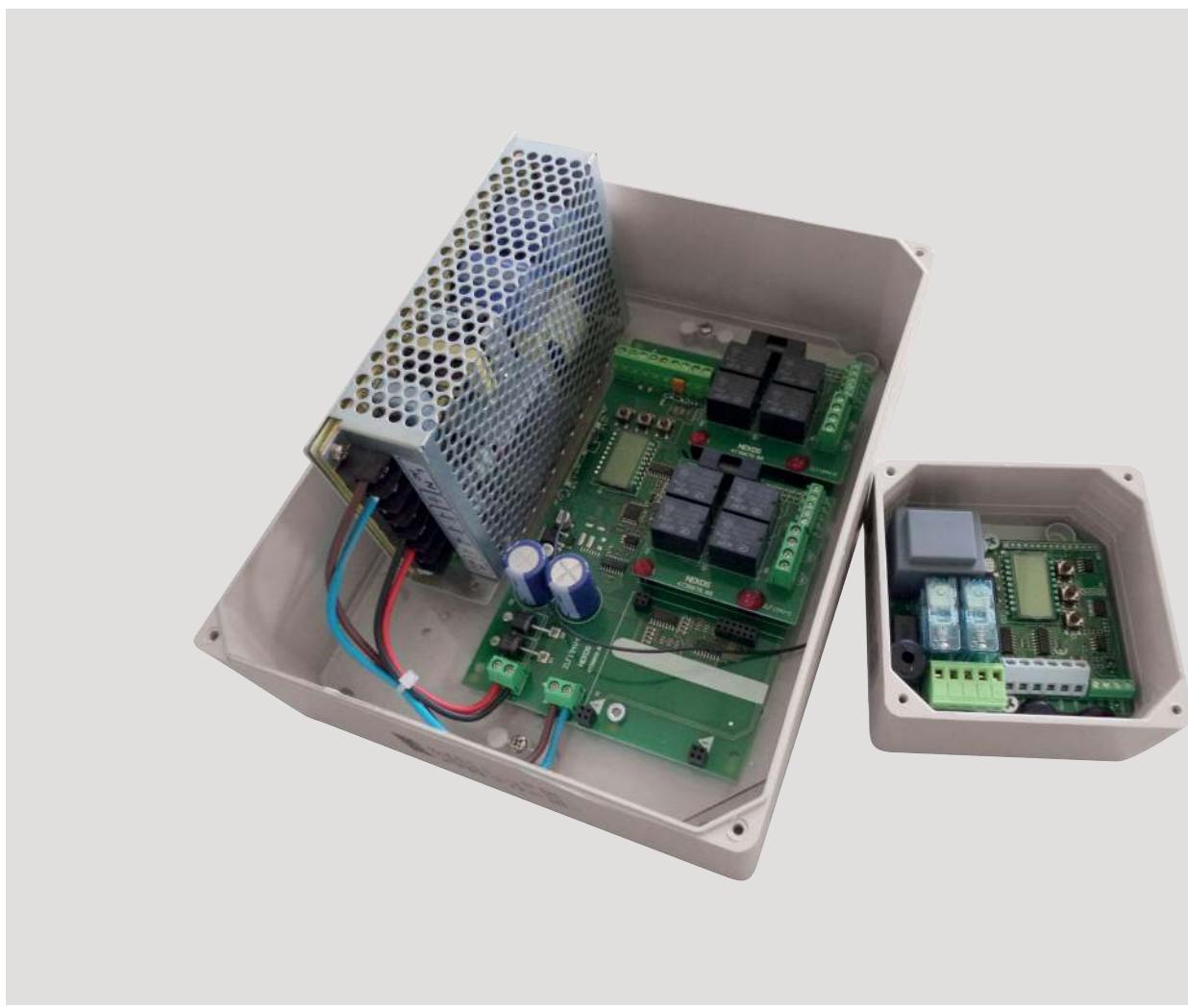


# SERIE K

## Control and ventilation units

After years of experience specifically in the window sector, Nekos has launched on the market the SERIE K control units, which use the principle of control system expansion to ensure the best performance of the window automation device. The control units are used to power and control low voltage (110-230V AC 50/60 Hz) and Safety ELV (SELV) (24V DC) electric motors, either individually or simultaneously. A programming menu – viewable on the display – allows customised settings to be made. The "R" version, equipped with a radio receiver, allows remote control of the motors through the PIK 30-channel radio remote control or the EVO 3-commands transmitter. The control units automatically monitor the weather conditions with the aid of rain, wind and light sensors and a daily timer. For a more complete understanding of the functions, see the instruction manual available on the website [www.nekos.it](http://www.nekos.it).

All the control units are housed in an impact-resistant plastic cabinet with an IP65 protection rating and comply with the EMC and LV Directives.



### APPLICATIONS

ACTUATOR COMMAND  
ELECTRICAL MOTOR

### TO BE USED WITH:

**KH 230V:** 230V Actuators and Motors  
**KL 24V:** 24V Actuators and Motors

PIK  
EVO  
NRS1  
V'1

**MODEL SERIE K**

	<b>KH1 KH1R</b>	<b>KH2 - KH4 - KH6 KH2R - KH4R - KH6R</b>	<b>KL2 KL2R</b>	<b>KL4 KL4R</b>	<b>KL6 KL6R</b>
Feeding tension to central	230V ~ 50/60 Hz			110-230V ~ 50/60 Hz	
Output tension	230V ~ 50/60 Hz	110-230V ~ 50/60 Hz			24V DC
Maximum switchable output current				see instruction manual downloadable from <a href="http://www.nekos.it">www.nekos.it</a>	
Maximum power absorbed by the station	2W	15W	75W	100W	150W
Max number of actuators connectible per output				see instruction manual	
Type of service				S <sub>1</sub> - Continuous	
Electrical insulation	Class II			Class I	
Setup for connection to external devices		General open/close command - Daily timer (NOT for KH1) Rain sensor - Wind sensor			
Working temperature			-5°C - +65°C		
Protection index for electrical devices			IP65		
Dimensions	100x100x60 mm		240x190x120 mm		

CODE	MODEL - SERIE KH 230V
6720001	KH1 Unit for 1 230V output
6720002	KH1R Unit for 1 230V outputs + Remote control
6720003	KH2 Unit for 2 230V outputs
6720004	KH2R Unit for 2 230V outputs + Remote control
6720005	KH4 Unit for 4 230V outputs
6720006	KH4R Unit for 4 230V outputs + Remote control
6720007	KH6 Unit for 6 230V outputs
6720008	KH6R Unit for 6 230V outputs + Remote control

CODE	MODEL SERIE KL 24V
6720009	KL2 Unit for 2 24V outputs
6720010	KL2R Unit for 2 24V outputs + Remote control
6720011	KL4 Unit for 4 24V outputs
6720012	KL4R Unit for 4 24V outputs + Remote control
6720013	KL6 Unit for 6 24V outputs
6720014	KL6R Unit for 6 24V outputs + Remote control

# MODIX

## Autonomous power unit for 24V motors

MODIX control unit is a unit that provides the SERIE KL with a battery pack, to supply 24V motors autonomously, even in the absence of mains voltage. When power is not required, a charging device keeps the batteries always charged and ready for use. All the control and command functions are the same as on the SERIE KL control units, with the same circuit board integrated into the MODIX, therefore it interfaces with all the same devices that connect to the KL units (sensors, controls, 24V motors).

In the event that power greater than 1,2Ah is required, the battery pack capacity should be increased. MODIX control unit is housed in an impact-resistant (grey) plastic cabinet with an IP43 protection rating containing the batteries, a backup charging device, the interface board and the required SERIE KL control unit circuit board. The "R" version, provided of radio receiver, allows the remote command of motorisations by PIK 30-channels remote control or by EVO 3-commands transmitter.

The device has CE marking and conforms to relevant EU industry directives.



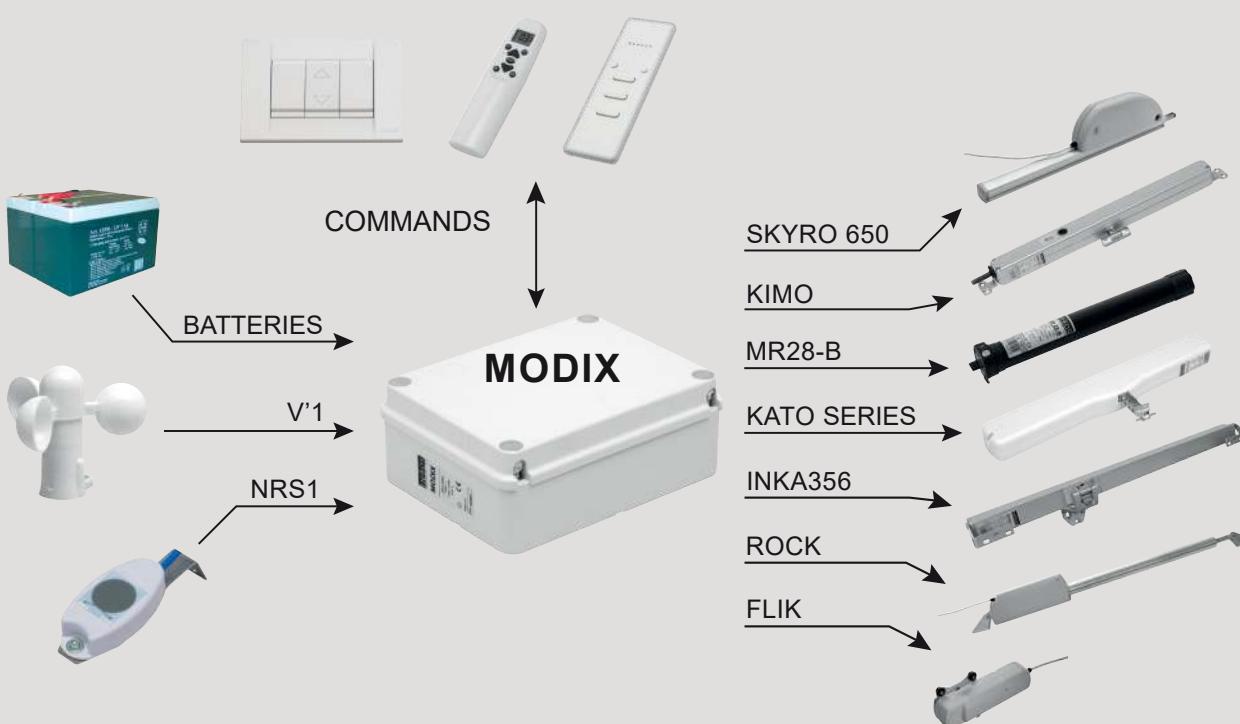
### APPLICATIONS

24V ACTUATORS AND  
MOTORS FEEDING COMMAND

### TO BE USED WITH:

24V MOTORS

PIK  
EVO  
NRS1  
V'1

**MODEL**

Feeding tension to central	110-230V ~ 50/60 Hz
Output tension	24V DC
Maximum absorbed current	see SERIE KL control units
Max output current	see SERIE KL control units
Setup for connection to external devices	see SERIE KL control units

**MODIX**

Type of service	S1 Continuous
Electrical insulation	Class I
Working temperature	-5°C - +65°C
Protection index for electrical devices	IP43
Dimensions	240x190x120 mm

**CODE**

6720021	Central Unit MODIX2
6720022	Central Unit MODIX4
6720023	Central Unit MODIX6
6720027	Central Unit MODIX2R
6720028	Central Unit MODIX4R
6720029	Central Unit MODIX6R

## CONNECTIVITY GUIDE

CONTROL UNITS	NEKOS ACTUATORS										SENSORS				
	"R" RADIO	"R" RADIO	"R" RADIO	"R" RADIO	"R" RADIO	"R" RADIO	"R" RADIO	"R" RADIO	"R" RADIO	"R" RADIO	"R" V1	"R" V'LUX	"R" GRADO	"R" PIK EVO	"R" REMOTE CONTROL
KH1/KH1R											RAIN SENSOR				
KH2/KH2R											RAIN102H				
KH4/KH4R											WIND SENSOR				
KH6/KH6R											WIND AND LIGHT SENSOR				
KL2/KL2R	•	•	•	•	•	•	•	•	•	•	TEMPERATURE SENSOR				
KL4/KL4R	•	•	•	•	•	•	•	•	•	•					
KL6/KL6R	•	•	•	•	•	•	•	•	•	•					
KL2+H2 KL2R+H2R (24V/230V)	•	•	•	•	•	•	•	•	•	•					
KL2+H4 KL2R+H4R (24V/230V)	•	•	•	•	•	•	•	•	•	•					
KL4+H2 KL4R+H2R (24V/230V)	•	•	•	•	•	•	•	•	•	•					
MODIX2 MODIX-2R	•	•	•	•	•	•	•	•	•	•					
MODIX4 MODIX-4R	•	•	•	•	•	•	•	•	•	•					
MODIX6 MODIX-6R	•	•	•	•	•	•	•	•	•	•					
AUX230-1 AUX230-1R	•	•	•	•	•	•	•	•	•	•					
AUX230-2 AUX230-2R	•	•	•	•	•	•	•	•	•	•					

# ACCESSORIES



# AUX

## Accessory for 24V electrical actuators

AUX is a 110-230V~ (AC) or 24V (DC) accessory unit, for natural ventilation systems employing 24V (DC) electrical actuators to open and close windows.

The product is available in 6 versions:

MODEL AUX	230-1	230-2	230-1R	230-2R	24-8	24-8R
Power supply voltage	110-240V~	110-240V~	110-240V~	110-240V~	24V	24V
Max output voltage	24V 1A	24V 2A	24V 1A	24V 2A	24V 8A	24V 8A
Remote control			●	●		●
Window status output	●	●	●	●	●	●
Open-Close input					●	●
Chain status signal					●	●



MODEL AUX	AUX 230 - 1/1R	AUX 230 - 2/2R	AUX 24V - 8/8R
Power supply voltage	110-240V~ 50/60 Hz	<1W 24V DC	SELV 24V DC (20,8-28,8)
Stand-by power absorption			
Output voltage			
Rated output current	1 A	2 A	8 A
Max. input current	0,7 - 0,5 A	1,4 - 1 A	8 A
Active power at maximum load	30 W	60 W	192 W
Type of service	S <sub>1</sub> (Continuous)		
Working temperature	-20°C - +70°C		
Output voltage activation time	240 s		
Electrical insulation	Class II		Class III
Working frequency / Receiver category (only Radio version)	433,92 Mhz/ 2		
Protection index for electrical devices	IP20		
Dimension (L x P x H)	200x30x30 mm		100x30x30 mm
Weight	0,2 Kg	0,3 Kg	0,1 Kg
Voltage free flow rate of the output contact window status		2 A / 30V DC	
Max. output current chain status	//	//	10mA (Open collector)
Input type Open/Close control	//	//	Normally open

### APPLICATIONS

TO SUPPLY ACTUATORS  
FOR NATURAL VENTILATION  
SYSTEMS

### TO BE USED WITH:

24V SUPPLIED ACTUATORS  
24V ELECTRICAL MOTORS

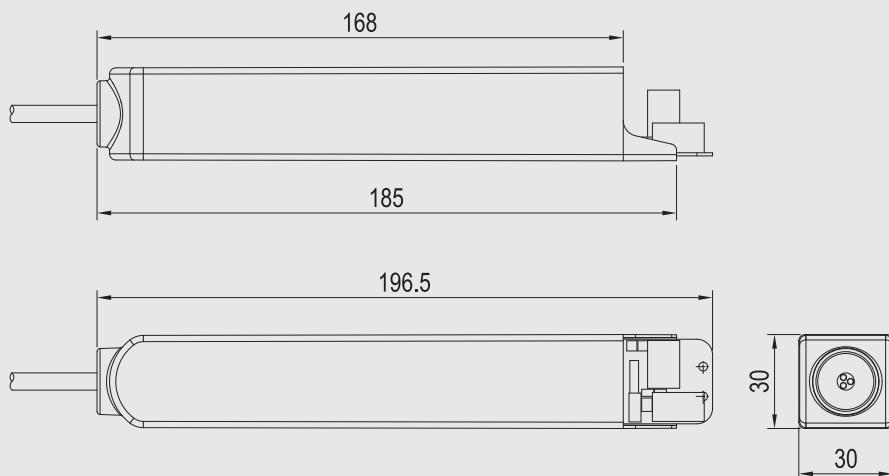
PIK  
EVO  
NRS1



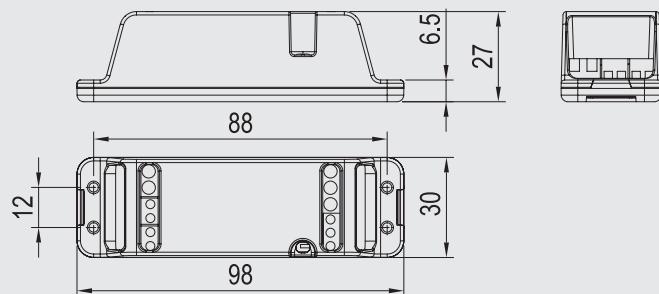
## TECHNICAL CHARACTERISTICS (Functional and mechanical features)

- Thanks to its small dimension and ease of use, it's suitable to be flush mounted in window frames or in junction boxes. The dimension is: 30x30 mm, length 100 (200) mm.
- AUX is a low power consumption device that can replace the more complex SERIE K units in case all functions are not required. If connected to actuators with Syncro<sup>3</sup> technology, it also provides information about the status of the window such as: totally open/ closed window, or opening percentage.
- It's activated through a switch or a remote control. The AUX../R accessories are supported by the Nekos remote control model PIK with a radio frequency of 433,92 Mhz or by EVO 3-commands transmitter.
- Stand-By power absorption lower as 1W.
- The electronic board of the 230V version inserted in a container made of plastic material is completely resin-coated and insulated, only 24V contacts to the actuator are left accessible.
- The product complies with EU directives (EMC, Low Voltage Directive).

**Input 110-240V~ (AC)**



**Input 24V DC**



CODE	MODEL
6720030	AUX230V-1 Accessory input 230V output 24V – Output 1 A
6720031	AUX230V-1R Accessory input 230V output 24V – Output 1 A + PIK
6720032	AUX230V-2 Accessory input 230V output 24V – Output 2 A
6720033	AUX230V-2R Accessory input 230V output 24V – Output 2 A + PIK
6720034	AUX24V-8 Accessory input 24V output 24V – Output 8 A
6720035	AUX24V-8R Accessory input 24V output 24V – Output 8 A + PIK

# RR2-M

## Two channel flush-mounted radio receiver



A compact two-channel receiver module that is used for the remote control of 110-230V 50/60Hz fixtures (actuators, roller shutters, curtains and blinds, radio control for switching on lights and intelligent management). An extremely compact two-channel receiver with two relays powered directly by the mains power supply. It is equipped with a OOK/ASK superheterodyne receiver for high performance and reliability, and controlled by microprocessor, with functions including decoding, self-learning of radio commands and a digital anti-disturbance filter for further improvement of radio performance. A SAW filter improves selectivity and suppresses out-of-band interference. It is also equipped with a reliable and efficient low consumption power supply (standby  $\leq 0.3W$ ) with a wide range of operating voltages and is protected from overvoltages at the mains input. The device complies with European standard I-ETS 300 220 and ETS 300 683.

The remote control must be ordered separately.


**MODEL**

	<b>RR2-M</b>
Power supply voltage	110-230V ~ 50/60Hz
Power absorbed (Standby - reception only)	0,3 W
Power absorbed (1 relay active)	0,8 W
Power absorbed (2 relays active)	1,4 W
Operating frequency	433,92 MHz
Range in free space	150 m
Range in internal environment	20 m
No. of transmitters that can be memorized	30

Switch-on time	2 s
Control actuation time	0,5 s
No. of local ingresses	2
Maximum current with closed contact	5 A
Protection index for electrical devices	IP20
Working temperature	-20°C - +55°C
Dimensions	H = 36, W = 42, L = 21 mm

**TO BE USED WITH:**

ALL 230V MOTORS:  
 KATO 253 230V  
 KATO 230V (NO SYNCRO<sup>3</sup> vers.)  
 KATO 305 230V  
 INKA 356 230V  
 ROCK 230V  
 SKY 450  
 SKYRO 650 230V  
 FLIK

PIK  
EVO

CODE	MODEL
7505028	RR2-M 2 Channels Radio Receiver

# KOUPLE

## Tandem control unit for actuators



KOUPLE is a control unit that controls the parallel (tandem) operation of two actuators. In automations on large windows, it is often necessary to install two actuators to ensure a good closure of the sash or to have dual power without using synchronised actuators.

- KOUPLE system is not a synchronisation device; the control unit merely checks whether one of the two machines stops. In this case, it also shuts down the operation of the other actuator to avoid causing damage to the window or to the machines themselves.
- The actuator controls should be connected to the KOUPLE control unit, which has two outputs to the actuators.
- The circuit board is housed in a box made from plastic material, which should be located near the actuators it controls.


**MODEL KOUPLE**

Power supply voltage	110/230V ~ 50/60Hz
Max output current	2,50 A + 2,5 A
Electric protection	2 T 2,5 A fuses
Type of service	2 cycles
Electrical insulation	Class II
Working temperature	-5°C - + 65°C
Protection index for electrical devices	IP55
Dimensions	100x100 h=60 mm
Weight (in order of installation)	0,190 Kg

**230V**
**KOUPLE 24V**

24V DC
1 T 5 A fuses
5 cycles
Class III

1 T 5 A fuses

5 cycles

Class III

-5°C - + 65°C

IP55

100x100 h=60 mm

0,175 Kg

**TO BE USED  
WITH:**

 KATO 253  
SKY 450

CODE	MODEL
7505024	KOUPLE 230V - 2 230V motors
7505040	KOUPLE 24P - Powered 24V (KATO and SKY)

# ALI'SW

## Power supply unit



ALI'SW is a power supply device for Safety ELV (SELV) motors designed for installation 3-module flush-mounted back boxes. A switching power supply with a 110-230V 50/60Hz input, it supplies an output voltage of 24V DC, with a maximum current of 0,5 A.

The control for operating the motor uses innovative touch-switch technology, which activates the command at the simple touch of the "deadman" button or in automatic mode. The touch-switch board can be applied on any commercial socket cover plate to provide an elegant electric control that integrates with the design of the home environment.

The rapid connector wiring between the touch-switch and power supply unit is 20 cm long for insertion in the same flush box; on request, an 80 cm cable is available for using the solution with two separate boxes.

With the addition of a control unit and light sensor, the brightness in the room can be adjusted independently and automatically as the external lighting changes.

MODEL	ALI'SW
Power supply voltage	110-230V ~ 50/60 Hz
Nominal output voltage	24V DC
Current absorbed when loaded	0,170 A ~
Maximum output current	0,6 A
No. of motors applicable	No. 1 chain actuator KIMO No. 1 Tubular Gear Motor MR28
Electrical insulation	Class II
Type of service	S1 Continuous
Working temperature	-5°C - +65°C
Protection index for electrical devices	IP20
Power cable	NOT provided
Protection at overload	Electronic
Dimensions	87,5x55,5x27,5 mm
Weight (power supply unit only)	0,085 Kg

### TO BE USED WITH:

MR28-B  
KIMO  
KIMO 202

CODE	MODEL
6810005	ALI'SW 24V with push button (Vimar white)
6810006	ALI'SW 24V for manual command

# PIK

## Electronic remote control

PIK is the Nekos transmitter for remote control via radio. It features a modern, functional, comfortable and ergonomic design.

It has 30 direct transmission channels (increased to 90 control functions with the F1 and F2 function buttons) at a radio frequency of 433.92 MHz (rolling code) with over 18 trillion possible code combinations.



### MODEL

	PIK
Type	Multi-channel radio remote control with microprocessor
Number of transmission channels	30
Transmission frequency	433,92 MHz
Modulation	OOK (On-Off Kejing)
Power supply voltage	2 1,5V batteries - type AAA
Working tension	1,8V - 3,3V
Estimated lifetime of the batteries	> 2 years (assuming an average use of 1 minute per day)
Display	LCD (liquid crystal display)
Visualisation	2 digits (selected channel) -Battery charge status indicator - Transmission state - Specific function letters
Display dimensions	18,5x13,5 mm
Encoding	HCS301
Independant codes	>18 x 10^18 "rolling code" combination
Absorption in standby	< 1µA
Absorption in transmission	< 20 mA
Keypad	Operational control (UP arrow, DOWN arrow, STOP) - 2 function buttons (F1, F2) - 1 memory button (M) - 1 channel button (CH)
Transmission distance	< 50 m (with charged batteries and free field)
Dimensions	145x38,5x22,5 mm
Weight	76 g

### TO BE USED WITH:

KATO ADV RADIO  
Serie KL-R  
Serie KH-R  
RR2M  
AUX  
MODIX  
FLIK

CODE	MODEL
7505025	PIK 433MHz Remote control

# EVO | 3-commands transmitter

UHF band transmitter with PPL controlled carrier frequency. This type of transmitter is used for controlling devices for domestic use, automatic openings, ON-OFF light control, dimming, etc. This appliance transmits a rolling code type signal to guarantee maximum secrecy. The transmitter code can be stored in the receiver directly via the latter or via radio from the transmitter. With the second possibility you can add new transmitters to an existing system without having to touch the receiver. This can be done directly by the end user (the installer's help is not required). The code is stored in the receiver's EEPROM memory that retains it even if power is cut temporarily.



MODEL	EVO
Carrier frequency	433.92 MHz
ERP	0dBm
Power supply	3V ± 10% (lithium battery CR2430)
Consumption when transmitting	10 mA
Working temperature	-10°C - +55°C

## TO BE USED WITH:

KATO ADV RADIO  
SERIE KL-R  
SERIE KH-R  
RR2-M  
AUX  
MODIX  
FLIK

CODE	MODEL
7505051	EVO 3-commands transmitter

# RAIN102H |

## Heated rain sensor

The sensor detects the presence of water drops over the sensitive pad. It's possible to enable the heating function in permanently way or only in case of rain alarm. Rain alarm detection is done with a 3s delay. The measurement sensitivity can be configured.


**MODEL**

Power supply	12Vdc (max.100mA)
Operating temperature range	-20°C - +50°C
Protection rating	IP65
Dimensions	130 x 50 x 37 mm

**RAIN102H**

12Vdc (max.100mA)
-20°C - +50°C
IP65
130 x 50 x 37 mm

**TO BE USED WITH:**

KATO ADV RADIO

CODE	MODEL
7505050	RAIN102H heated rain sensor 12V

# NRS1

## Heated rain sensor

The rain sensor is a device that is placed outdoors where it can interact with the actuators in the event of continuous rain. The sensor can be connected directly by wire to the SERIE K control units and to all equipment that can process the signal or where a dry (potential-free) contact signal is necessary.

The sensor is not sensitive to dewdrops or humidity, dries quickly after rainfall and does not allow the formation of ice. The power supply cable is 5 m long and built to withstand the harsh outdoor environment, with a highly weather - resistant PVC sheath that is also fire-retardant and resistant to UV radiation.


**MODEL**

	<b>NRS1</b>
Power supply voltage	12V - 24V DC
Maximum absorbed current	20 mA (120 mA with active heater)
Type of sensor	Capacitive
Heater intervention	< +5°C
Type of contact	SPDT
Rating contact	0,5 A / 125V~ - 1 A / 24V DC

Working temperature	-20°C - +65°C
Length of power cable	5 m
Type of power cable and no. wires	PVC protected from UV - 5 wires
Protection index for electrical devices	IP65
Dimensions	45x93 h=19 mm
Weight	52 g (cable excluded)

**TO BE USED WITH:**

**NRS1**  
SERIE KL and SERIE KL-R  
SERIE KH and SERIE KH-R  
MODIX  
AUX

CODE	MODEL
7505021	NRS1 Heated Rain Sensor

# V'1, V'LUX | Wind detector and wind and light sensor

V'1 wind detector is a device, which, when connected to the control units, commands the automatic closure of windows when the wind speed surpasses a predetermined value. It is composed of a weather-resistant plastic body and a system of rotating hemispheres that capture the wind velocity.

V'LUX is a detector that incorporates both a light sensor and a wind speed sensor in a single device. The light function detects light intensity and sends the data to the control unit, which processes it and then opens or closes the window blinds in accordance with the control unit programme. The SERIE K ventilation/aeration control units are designed to process the signal of the light sensor and the signal from the wind detector in a similar way to the V'1 model.


**MODEL**

Electrical feeding

**V'1, V'LUX**

In low tension from the central unit

Wind sensor levels

 8 progressive from 5 to 40 km/h  
(to be set from the unit)

Light sensor levels

 0 - 50 klx  
(to be set from the unit)

Working temperature

-20°C - +90°C

Light relief angle

120° (-60° - +60°)

Protection index for electrical devices

IP34

Dimensions

Ø 125x93 mm

Weight

70 g

**TO BE USED WITH:**
**V'1**

 SERIE KL and SERIE KL-R  
SERIE KH and SERIE KH-R

**V'LUX**

SERIE KH1 and SERIE KH1-R

**CODE**

7505002

**MODEL**

V'1 Wind Sensor

7505004

V'LUX Wind and Light Sensor

# GRAD°

Temperature  
detector

GRAD° temperature detector is a sensor that measures the temperature in the surrounding environment and sends the data to the control unit, which processes it and controls the opening/closing of windows, curtains and blinds or roller shutters. The Ø6 mm sensor is located at the end of a cable 1.5 metres in length and can be installed in any position. Its sole control unit is the KH1 (and KH1R) model. GRAD° sensor can be used in greenhouses, winter gardens, etc.



MODEL	GRAD°
Working temperature	-50°C - +120°C
Sensor	NTC 10K
Precision	+/- 1% - Beta 3435
Reply time	K (constant) = 10 s (with 2 m/s water flow)
Bulb material	Thermoplastic rubber
Model with tapered tip	NO
Protection index for electrical devices	IP67
Cable material	Thermoplastic rubber strap black colour

**TO BE USED  
WITH:**

SERIE KH1  
SERIE KH1/R

CODE	MODEL
7505008	GRAD° Temperature detector

# BRACKETS



# KIMO Series |

## INCLUDED IN THE PACKING:



### **Code 4010085**

Half-brackets for chain junction  
Series colour grey RAL9006

### **APPLICATIONS**

KIMO SERIES

### **Code 4010146**

Support brackets  
Series colour: black - white - grey

### **APPLICATIONS**

KIMO 202

### **Code 4010147**

Support brackets flush-mounted  
Series colour: black - white - grey

### **APPLICATIONS**

KIMO 202

### **Code 4010084**

Support brackets flush-mounted  
Series colour grey RAL9006

### **APPLICATIONS**

KIMO

## TO BE REQUESTED SEPARATELY:



### **Code 4010148**

Vasistas bracket  
Series colour: black - white - grey

### **APPLICATIONS**

KIMO SERIES



### **Code 4010125**

Support brackets for visible  
applications  
Series colour grey RAL9006

### **APPLICATIONS**

KIMO



### **Code 4010019**

Outward bracket in metal h. 14 mm  
Series colour: black - white - grey

### **SPECIAL APPLICATIONS**

KIMO  
KATO Series

## KATO Series |

### INCLUDED IN THE PACKING:



**Code 4010053**

Chain rapid release hook  
Stainless steel Material

**APPLICATIONS**

KATO SERIES



**Code 4010002**

Standard support brackets  
Series colour: black - white - grey

**APPLICATIONS**

KATO SERIES



**Code 4010003**

Vertical mounting brackets  
Series colour: black - white - grey

**APPLICATIONS**

KATO SERIES (excluded KATO 253)



**Code 4010005**

Bracket for awning window  
Series colour: black - white - grey

**APPLICATIONS**

KATO SERIES



**Code 4010006**

Bracket for hopper application  
Series colour: black - white - grey

**APPLICATIONS**

KATO SERIES

### TO BE REQUESTED SEPARATELY:



**Code 4010025**

Bracket for awning window,  
horizontal junction  
Series colour: black - white - grey

**APPLICATIONS**

KATO SERIES



**Code 4010026**

Dormer window brackets  
Series colour: black - white - grey

**APPLICATIONS**

KATO SERIES

**Code 4010027**

Bracket for outward opening with security clutch  
Series colour: black - white - grey

**APPLICATIONS**

KATO SERIES

**Code 4010019**

Outward bracket in metal h. 14 mm  
Series colour: black - white - grey

**SPECIAL APPLICATIONS**

KATO SERIES  
KIMO

**INCLUDED IN THE PACKING:****Code 4010053**

Chain rapid release hook  
Stainless steel Material  
To be used with brackets code  
**4010038, 4010039 and 4010040**

**APPLICATIONS**

KATO SERIES

**Code 4010044**

Standard support brackets  
Series colour: black - white - grey

**APPLICATIONS**

KATO 305

**TO BE REQUESTED SEPARATELY:****Code 4010038**

Bracket for hopper application  
Series colour: black - white - grey

**APPLICATIONS**

KATO 305

**Code 4010039**

Bracket for awning window, front junction  
Series colour: black - white - grey

**APPLICATIONS**

KATO 305

**Code 4010040**

Bracket for awning window,  
horizontal junction  
Series colour: black - white - grey

**APPLICATIONS**

KATO 305

**KATO 305 |**

# INKA 356 |

## TO BE REQUESTED SEPARATELY:

**Code 4010119**

Chain rapid release hook  
Stainless steel Material  
To be used with brackets code  
**4010115, 4010116 and 4010117**

**APPLICATIONS**

INKA 356 (extra spare parts)

**Cod. 4010115**

Bracket for hopper application  
Series colour grey RAL9006

**APPLICATIONS**

INKA 356

**Cod. 4010116**

Bracket for awning window  
Series colour grey RAL9006

**APPLICATIONS**

INKA 356

**Cod. 4010117**

Bracket for awning window,  
horizontal junction  
Series colour grey RAL9006

**APPLICATIONS**

INKA 356

**Cod. 4010118**

Standard support brackets  
Series colour grey RAL9006

**APPLICATIONS**

INKA 356

**Cod. 4010130**

Support brackets flush-mounted  
Series colour grey RAL9006

**APPLICATIONS**

INKA 356

**Cod. 4010129**

Wing bracket flush-mounted  
Series colour grey RAL9006

**APPLICATIONS**

INKA 356

**Cod. 4010144**

Outward bracket in metal h. 14 mm  
Series colour grey RAL9006

**SPECIAL APPLICATIONS**

INKA 356

— SKY 450 | — SKY 650 |

ROCK |

## INCLUDED IN THE PACKING:



**Code 4010013**

Small parts packaging

**APPLICATIONS**

SKY 450  
SKYRO 650



**Code 4010051**

Bracket for fixing to the frame

**APPLICATIONS**

SKY 450



**Code 4010052**

Actuator support bracket

**APPLICATIONS**

SKY 450



**Code 4010014**

Bracket for fixing to the frame

**APPLICATIONS**

SKYRO 650



**Code 4010015**

Actuator support bracket

**APPLICATIONS**

SKYRO 650

## INCLUDED IN THE PACKING:



**Code 4010151**

Junction bracket ROCK

**APPLICATIONS**

ROCK

**TO BE REQUESTED SEPARATELY:****Code 4010126**

Rack FLIK 300 mm

**APPLICATIONS**

FLIK

**Code 4010127**

Flat bracket for FLIK installation

**APPLICATIONS**

FLIK

**Code 4010128**

90° bracket for FLIK installation

**APPLICATIONS**

FLIK

**FLIK**



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