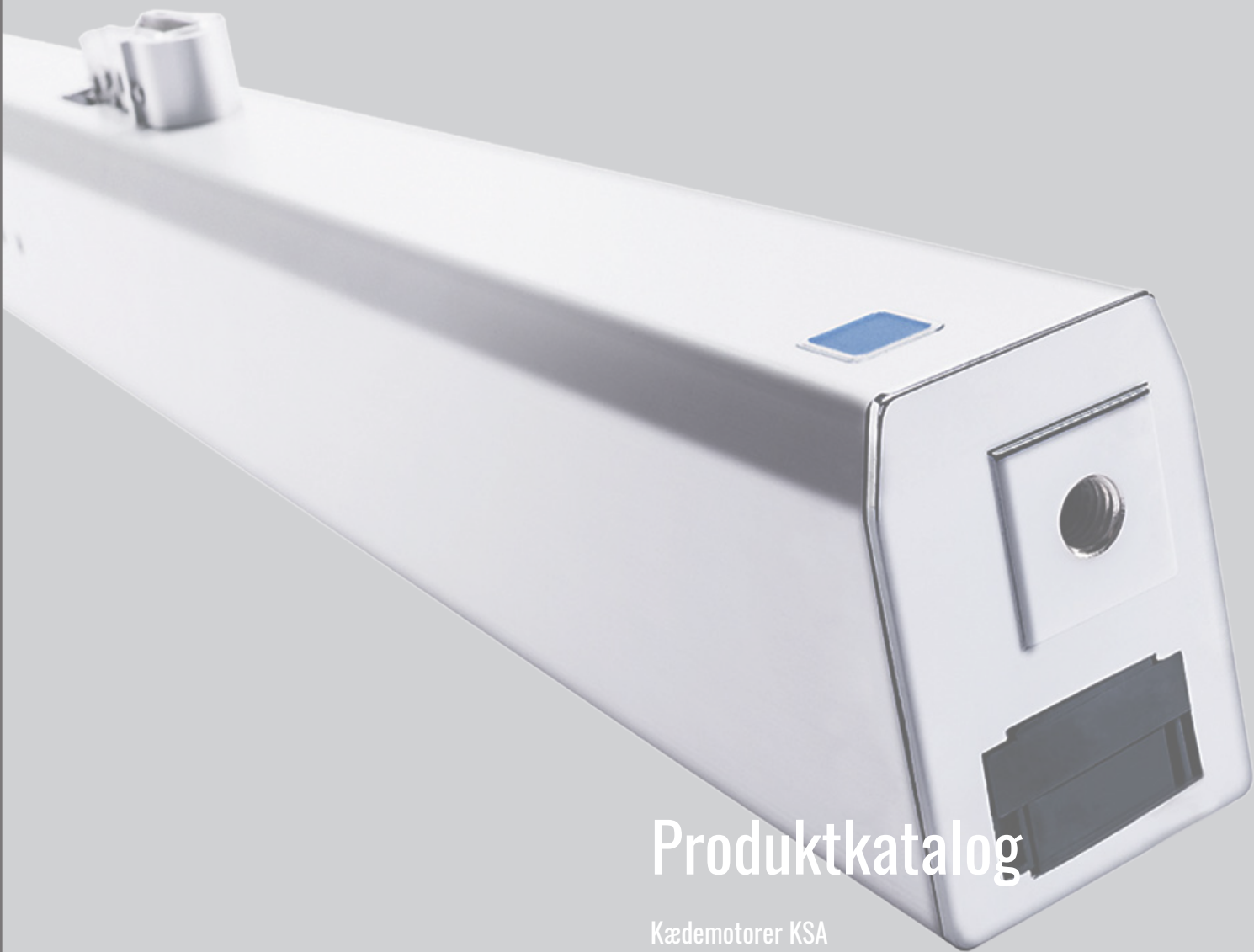


MBM || MAB



# Produktkatalog

Kædemotorer KSA

Oktober 2020

OVERVIEW OF CHAIN DRIVES																		
Type	Form	Model		Stroke	Force		Speed		Stroke in	Cut-off current	Use			Loca- tion	Functions			
		Type of cut-off	Rated voltage	Range	Pushing force	Pulling force	OPEN	CLOSE	60 s	Max.	Natural ventilation	SHEV	NSHEV	Facade	Roof	Run monitoring	Synchronised run	Sequence control
			[V]	[mm]	[N]	[N]	[mm/s]	[mm/s]	[mm]	[A]								
KS2	SOLO	S2	24	50 – 800	200 – 50	200	10,0	10,0	600	0,7	●	■		●				
			230	50 – 800	200 – 50	200	10,0	10,0	600	0,7	●	■		●				
		S12	24	50 – 1000	250 – 50	250	8,0 – 13,5	8,0	800	1,0	●	●	●	●	■	■	●	●
			230	50 – 1000	250 – 50	250	8,0	8,0	450	0,2	●			●	■	■	●	■
	TWIN	S12	24	50 – 1000	500 – 100	500	8,0 – 13,5	8,0	600	1,4	●	●		●	■	■	●	●
	KS4	Solo	S12	24	50 – 1000	400 – 50	400	8,0 – 13,5	8,0	800	1,2	●	●	●	●	■	■	●
KSA	SOLO	S12	24	250 – 1500	600 – 50	600	8,0 – 13,5	8,0	800	1,2	●	●	●	●	■	■	●	●
			230	250 – 1500	600 – 50	600	8,0	8,0	800	0,2	●			●	■	■	●	●
	TWIN	S12	24	400 – 600	1200 – 600	1200	8,0 – 12,0	8,0	600	2,4	●	●		●	■	■	●	●
	D	S12	24	400 – 800	1200 – 400	1200	8,0 – 13,5	8,0	800	2,4	●	●		●	■	■	●	●

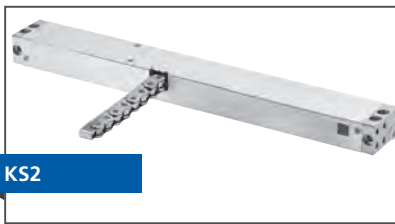
### LEGEND

● suitable    ■ not recommended

S2 internal load dependend cut-off switch

S12 internal Intelligent Control Electronics for synchronised run and programmable functions

force and speed depend on the stroke



KS2

**KS2 CHAIN DRIVES**

- Model 24V DC, S2/S12 and 230V AC, S12
- Pulling/Pushing force max. 250 N (TWIN 500 N)
- Stroke length 50 – 800 mm – programmable (with S2)  
50 – 1000 mm – programmable (with S12)
- Speed 5 – 14 mm/s – programmable
- Housing (WxH) 42 x 26 mm, Length depending on stroke
- Opening mechanism Rigid back stainless steel sidebow roller chain
- Version R (Right), L (Left), TWIN, Z, Set 230V/24V
- Protection rating IP 32



KS2 TWIN



KS4

**KS4 CHAIN DRIVES**

- Model 24V DC, S12
- Pulling/Pushing force max. 400 N
- Stroke length 50 – 1000 mm – programmable
- Speed 5 – 14 mm/s – programmable
- Housing (WxH) 35 x 24 mm, Length depending on stroke
- Opening mechanism Rigid back stainless steel roller chain without protruding rivet heads
- Version R (right)
- Protection rating IP 32



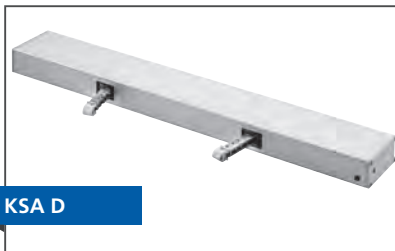
KSA

**KSA CHAIN DRIVES**

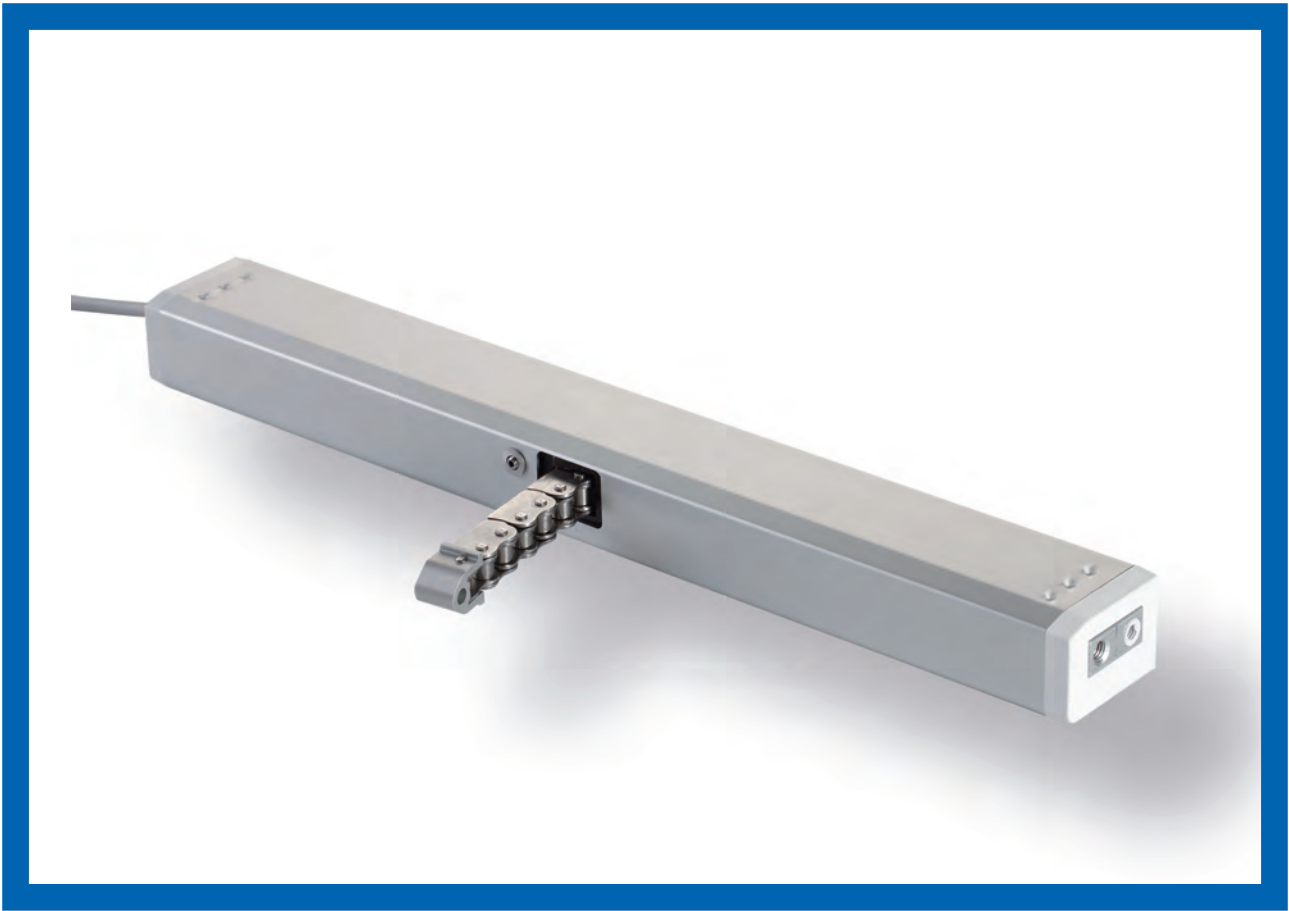
- Model 24V DC, S12 and 230V AC, S12
- Pulling/Pushing force max. 600 N (TWIN 1200 N)
- Stroke length 250 – 1500 mm – programmable (KSA)  
400 – 600 mm – programmable (KSA TWIN)  
400 – 800 mm – programmable (KSA D)
- Speed 5 – 14 mm/s – programmable
- Housing (WxH) 56 x 40 mm (D: 104 x 50 mm), Length depending on stroke
- Opening mechanism Rigid back stainless steel roller chain
- Version SOLO, TWIN, D, Z
- Protection rating IP 32



KSA TWIN



KSA D



### PRODUCT FEATURES KSA

- For natural ventilation, SHEV und ferralux® NRWG nach EN12101-2
- TWIN and D versions with two chains and doubled force
- Adjustable chain tension
- Mechanical chain unlocking
- Aluminium housing anodized or optionally in RAL colors
- High-quality stainless steel roller chain
- Programmable parameters of Intelligent Control Electronics S12:
  - Synchronised multi-operation and sequence control without add. devices
  - Electronic soft-start, soft-close and soft-stop at end of stroke control
  - Stroke, force, speed
  - Rebate control
- Suitable for operation with M-COM for the automatic configuration of synchronised run of multi drive systems and sequence control

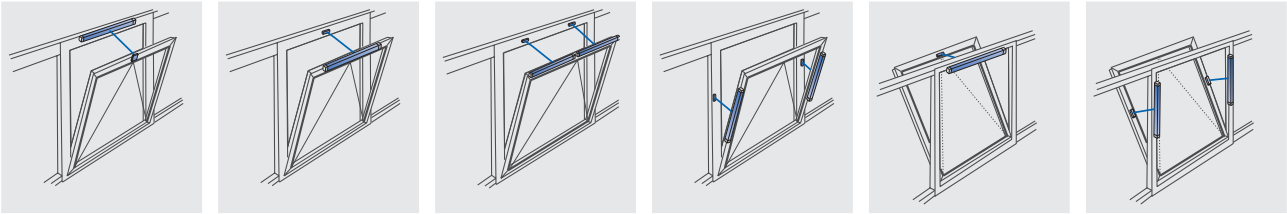
For this product series, a Type III Environmental Product Declaration (EPD) was issued according to ISO 14025 and EN 15804.

The LCA results of the different product types are listed at the end of this product catalogue.

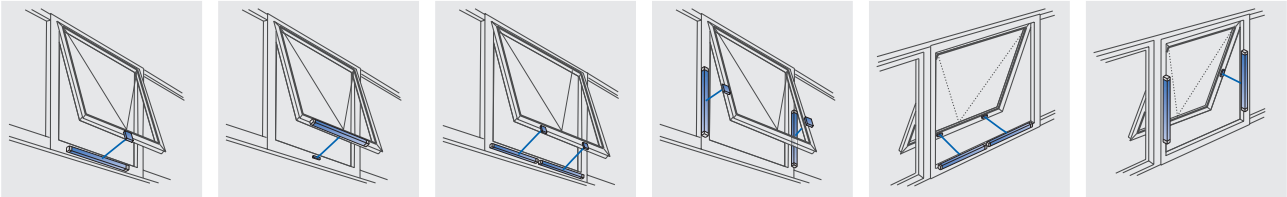
The EPD documents can be viewed or downloaded from our homepage [www.aumueller-gmbh.de](http://www.aumueller-gmbh.de).

**FACADE**

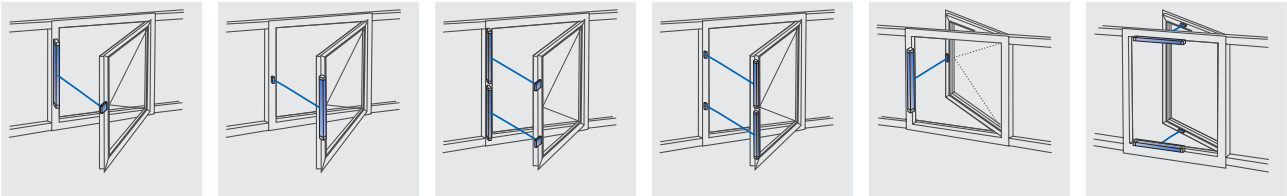
Bottom-hung



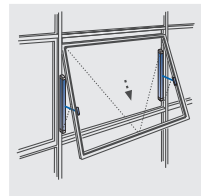
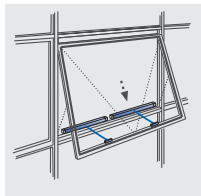
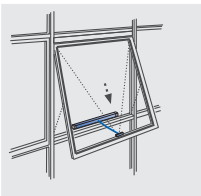
Top-hung



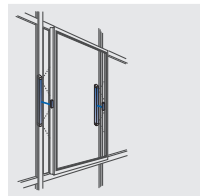
Side-hung



Friction hinged

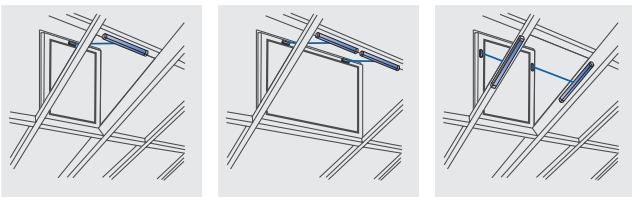


Parallel outward opening

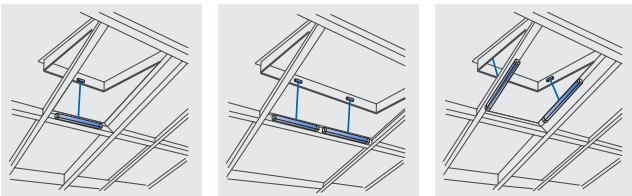


**ROOF**

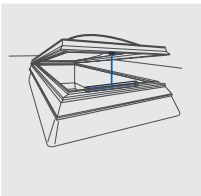
Bottom-hung



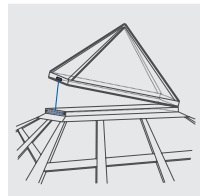
Top-hung



Sky light



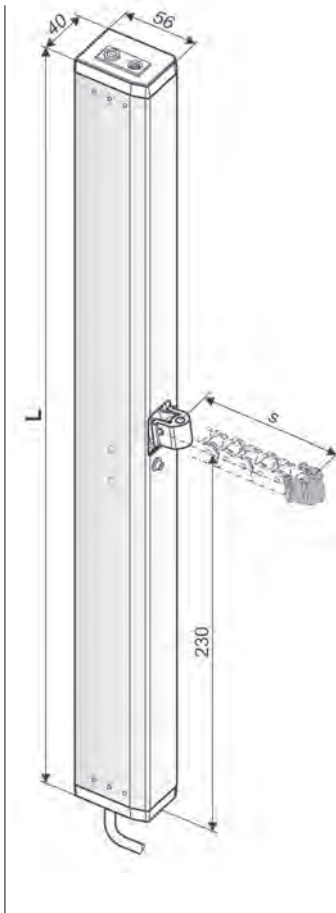
Glass pyramid



- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Internal Intelligent Control Electronics S12
- Adjustable chain tension / Mechanical chain unlocking

### Options

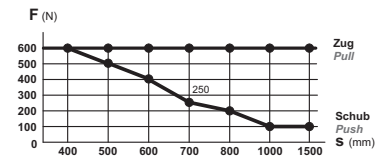
- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with locking drives (S3 / S12)



### TECHNICAL DATA

$U_N$	Rated voltage	24V DC ( $\pm 20\%$ ), max. 2 Vpp
$I_N$	Rated current	0,9 A
$I_A$	Cut-off current	1,2 A
P	Rated power	22 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +75 °C
F	Pulling force max.	600 N

Pushing force



$s > 800$  mm only for pulling application

Pullout force 3.000 N (fastening depended)

Chain stainless steel

Connecting cable non-halogen, grey 5 x 0,5 mm<sup>2</sup>, ~ 5 m

Speed

$s < 400$	8,0 mm/s	8,0 mm/s
$s 500 - 600$	12,0 mm/s	8,0 mm/s
$s > 600$	13,5 mm/s	8,0 mm/s

S Stroke 250 – 1.500 mm ( $\pm 5\%$ )

L Length see order data

Sound pressure level A  $\leq 70$  dB (A)

### In delivery

- 2x countersunk screws M8x16, 2x spacer ring (brass)
- chain unlocking key
- blind plug for unused cable entry
- 2x blind plugs for chain unlocking points
- warning sign sticker „Risk of entrapment“



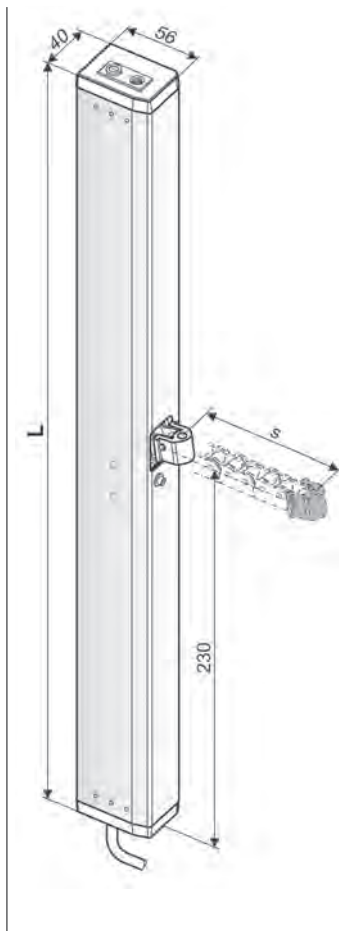
ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU / pcs.	Part.-No.	
250	461	KSA 250 S12 24V	E6/C-0	1	524825	
300	537	KSA 300 S12 24V	E6/C-0	1	524830	
400	537	KSA 400 S12 24V	E6/C-0	1	524840	
500	639	KSA 500 S12 24V	E6/C-0	1	524850	
600	639	KSA 600 S12 24V	E6/C-0	1	524860	
800	740	KSA 800 S12 24V	E6/C-0	1	524880	
1000	842	KSA 1000 S12 24V	E6/C-0	1	524810	
1200	944	KSA 1200 S12 24V	E6/C-0	1	524912	
1500	1097	KSA 1500 S12 24V	E6/C-0	1	524950	

OPTIONS			
Special model	PU / pcs.	Part.-No.	
<b>Drive housing painted/powder coated in other RAL colours</b>			
<b>Lump sum for coating</b>		516030	
Specify at order stage:	1 – 20	516004	
	21 – 50	516004	
	51 – 100	516004	
	up 101	516004	
<b>Extra length connecting cable:</b>			
10 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>		501056	
<b>Microprocessor programming S12</b>			
Electronic stroke reduction 24V S12		524190	
Programming drives 24V / 230V S12		524180	
<b>Optional accessories</b>			
M-COM Configuration module for synchronised multi-drive systems	1	524177	

- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Internal Intelligent Control Electronics S12
- Adjustable chain tension / Mechanical chain unlocking
- Programmable feedback limit position „OPEN“ and „CLOSE“ (max. 24V, 500 mA)

**Options**

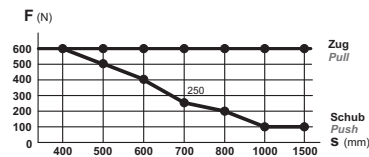
- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with locking drives (S3 / S12)



**TECHNICAL DATA**

$U_N$	Rated voltage	24V DC ( $\pm 20\%$ ), max. 2 Vpp
$I_N$	Rated current	0,9 A
$I_A$	Cut-off current	1,2 A
P	Rated power	22 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +75 °C
F	Pulling force max.	600 N

Pushing force



$s > 800$  mm only for pulling application

	Pullout force	3.000 N (fastening depended)															
	Chain	stainless steel															
	Connecting cable	non-halogen, grey 5 x 0,5 mm <sup>2</sup> , ~ 5 m															
	Speed	<table border="0"> <tr> <td><math>s &lt; 400</math></td> <td></td> <td>8,0 mm/s</td> <td></td> <td>8,0 mm/s</td> </tr> <tr> <td><math>s 500 - 600</math></td> <td></td> <td>12,0 mm/s</td> <td></td> <td>8,0 mm/s</td> </tr> <tr> <td><math>s &gt; 600</math></td> <td></td> <td>13,5 mm/s</td> <td></td> <td>8,0 mm/s</td> </tr> </table>	$s < 400$		8,0 mm/s		8,0 mm/s	$s 500 - 600$		12,0 mm/s		8,0 mm/s	$s > 600$		13,5 mm/s		8,0 mm/s
$s < 400$		8,0 mm/s		8,0 mm/s													
$s 500 - 600$		12,0 mm/s		8,0 mm/s													
$s > 600$		13,5 mm/s		8,0 mm/s													

S	Stroke	250 – 1.500 mm ( $\pm 5\%$ )
L	Length	see order data
	Sound pressure level A	$\leq 70$ dB (A)

**In delivery**

1	2x countersunk screws M8x16, 2x Spacer ring (brass)
2	chain unlocking key
3	blind plug for unused cable entry
4	2x blind plugs for chain unlocking points
5	warning sign sticker „Risk of entrapment“





ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU / pcs.	Part.-No.	
250	461	KSA 250 S12 24V Z	E6/C-0	1	524823	
300	537	KSA 300 S12 24V Z	E6/C-0	1	524833	
400	537	KSA 400 S12 24V Z	E6/C-0	1	524843	
500	639	KSA 500 S12 24V Z	E6/C-0	1	524853	
600	639	KSA 600 S12 24V Z	E6/C-0	1	524863	
800	740	KSA 800 S12 24V Z	E6/C-0	1	524883	
1000	842	KSA 1000 S12 24V Z	E6/C-0	1	524813	
1200	944	KSA 1200 S12 24V Z	E6/C-0	1	524923	
1500	1097	KSA 1500 S12 24V Z	E6/C-0	1	524953	

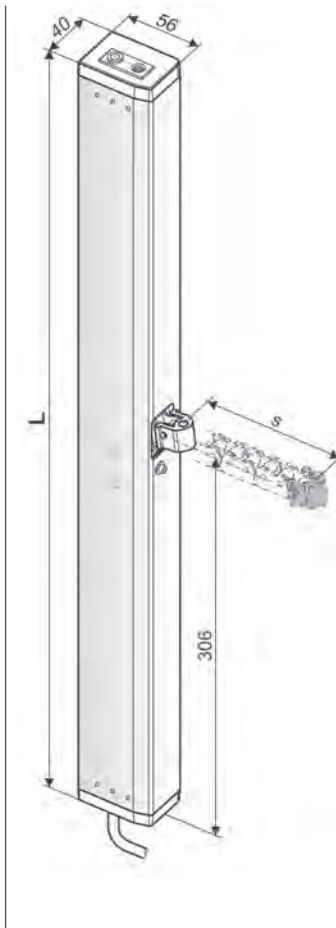
OPTIONS						
Special model		PU / pcs.	Part.-No.			
<b>Drive housing painted/powder coated in other RAL colours</b>						
<b>Lump sum for coating</b>				516030		
Specify at order stage:		1 – 20		516004		
		21 – 50		516004		
		51 – 100		516004		
		up 101		516004		
<b>Extra length connecting cable:</b>						
10 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>				501056		
<b>Microprocessor programming S12</b>						
Electronic stroke reduction 24V S12				524190		
Programming drives 24V / 230V S12				524180		
Optional accessories			PU / pcs.	Part.-No.		
M-COM Configuration module for synchronised multi-drive systems			1	524177		



- Application: natural ventilation
- Internal Intelligent Control Electronics S12
- Adjustable chain tension / Mechanical chain unlocking

**Options**

- Programmable synchronised run (max. 4 drives) and special functions



**TECHNICAL DATA**

$U_N$	Rated voltage	230V AC (50 Hz)
$I_N$	Rated current	0,2 A
$I_A$	Cut-off current	0,2 A
$P_N$	Rated power	46 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +75 °C
$F_Z$	Pulling force max.	600 N
$F_A$	Pushing force	
		$s > 800$ mm only for pulling application
$F_H$	Pullout force	3.000 N (fastening depended)
	Chain	stainless steel
	Connecting cable	non-halogen, grey 6 x 0,75 mm <sup>2</sup> , ~ 5 m
v	Speed	$\otimes$ 8,0 mm/s $\rightarrow$ 8,0 mm/s
s	Stroke	250 – 1.500 mm ( $\pm$ 5 %)
L	Length	see order data
	Sound pressure level A	$\leq$ 70 dB (A)
<b>In delivery</b>		
1	2x countersunk screws M8x16, 2x Spacer ring (brass)	
2	chain unlocking key	
3	blind plug for unused cable entry	
4	2x blind plugs for chain unlocking points	
5	warning sign sticker „Risk of entrapment“	

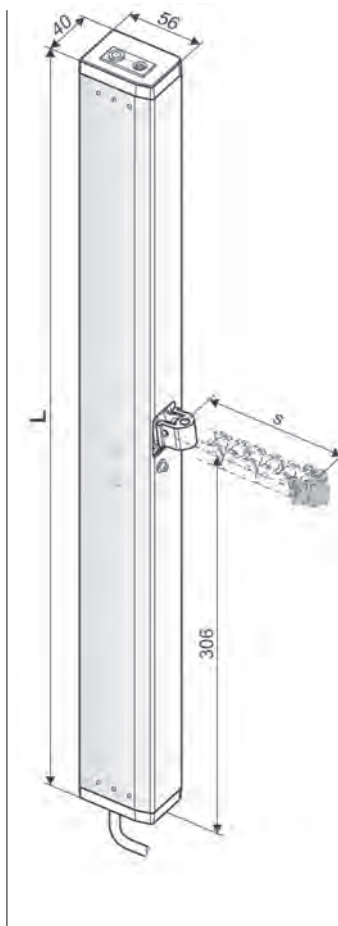


ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU / pcs.	Part.-No.	
250	537	KSA 250 S12 230V	E6/C-0	1	495220	
300	613	KSA 300 S12 230V	E6/C-0	1	495230	
400	613	KSA 400 S12 230V	E6/C-0	1	495240	
500	715	KSA 500 S12 230V	E6/C-0	1	495250	
600	715	KSA 600 S12 230V	E6/C-0	1	495260	
800	816	KSA 800 S12 230V	E6/C-0	1	495280	
1000	918	KSA 1000 S12 230V	E6/C-0	1	495200	
1200	1020	KSA 1200 S12 230V	E6/C-0	1	495320	
1500	1173	KSA 1500 S12 230V	E6/C-0	1	495350	

OPTIONS						
Special model		PU / pcs.	Part.-No.			
<b>Drive housing painted/powder coated in other RAL colours</b>						
<b>Lump sum for coating</b>				516030		
Specify at order stage:		1 – 20		516004		
		21 – 50		516004		
		51 – 100		516004		
		up 101		516004		
<b>Extra length connecting cable:</b>						
5 m – non-halogen, grey – 6 x 0,75 mm <sup>2</sup>				501164		
10 m – non-halogen, grey – 6 x 0,75 mm <sup>2</sup>				501166		
<b>Microprocessor programming S12</b>						
Programming synchronised multi-drive systems 230V S12				495588		
Electronic stroke reduction 230V S12				495590		
Programming drives 24V / 230V S12				524180		

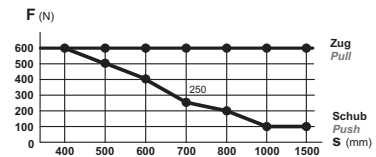


- Application: natural ventilation
- Internal Intelligent Control Electronics S12
- Adjustable chain tension / Mechanical chain unlocking
- Programmable feedback limit position „OPEN“ and „CLOSE“ (max. 24V, 500 mA)
- Parallel connection up to 8 drives in one group



### TECHNICAL DATA

$U_N$	Rated voltage	230V AC (50 Hz)
$I_N$	Rated current	0,2 A
$I_A$	Cut-off current	0,2 A
$P_N$	Rated power	46 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +75 °C
$F_Z$	Pulling force max.	600 N
$F_A$	Pushing force	



s > 800 mm only for pulling application

$F_H$	Pullout force	3.000 N (fastening depended)
	Chain	stainless steel
	Connecting cable	non-halogen, grey 6 x 0,75 mm <sup>2</sup> , ~ 5 m
v	Speed	$\otimes$ 8,0 mm/s $\rightarrow$ 8,0 mm/s
s	Stroke	250 – 1.500 mm ( $\pm$ 5 %)
L	Length	see order data
	Sound pressure level A	$\leq$ 70 dB (A)

### In delivery

- 1 2x countersunk screws M8x16, 2x Spacer ring (brass)
- 2 chain unlocking key
- 3 blind plug for unused cable entry
- 4 2x blind plugs for chain unlocking points
- 5 warning sign sticker „Risk of entrapment“



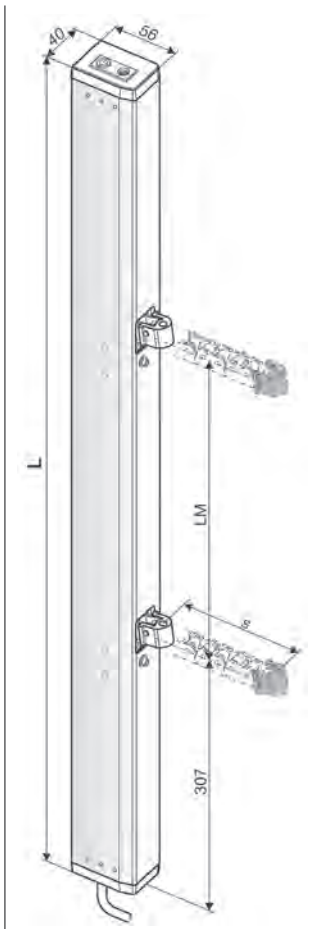
ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU / pcs.	Part.-No.	
250	537	KSA 250 S12 230V Z	E6/C-0	1	495223	
300	613	KSA 300 S12 230V Z	E6/C-0	1	495233	
400	613	KSA 400 S12 230V Z	E6/C-0	1	495243	
500	715	KSA 500 S12 230V Z	E6/C-0	1	495253	
600	715	KSA 600 S12 230V Z	E6/C-0	1	495263	
800	816	KSA 800 S12 230V Z	E6/C-0	1	495283	
1000	918	KSA 1000 S12 230V Z	E6/C-0	1	495203	
1200	1020	KSA 1200 S12 230V Z	E6/C-0	1	495323	
1500	1173	KSA 1500 S12 230V Z	E6/C-0	1	495353	

OPTIONS			
Special model	PU / pcs.	Part.-No.	
<b>Drive housing painted/powder coated in other RAL colours</b>			
<b>Lump sum for coating</b>		516030	
Specify at order stage:	1 – 20	516004	
	21 – 50	516004	
	51 – 100	516004	
	up 101	516004	
<b>Extra length connecting cable:</b>			
5 m – non-halogen, grey – 6 x 0,75 mm <sup>2</sup>		501164	
10 m – non-halogen, grey – 6 x 0,75 mm <sup>2</sup>		501166	
<b>Microprocessor programming S12</b>			
Electronic stroke reduction 230V S12		495590	
Programming drives 24V / 230V S12		524180	

- Application: natural ventilation, SHEV
- Internal Intelligent Control Electronics S12
- Adjustable chain tension / Mechanical chain unlocking

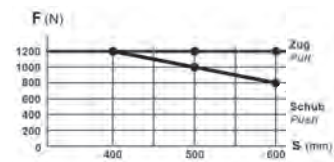
**Options**

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with locking drives (S3 / S12)



**TECHNICAL DATA**

$U_N$	Rated voltage	24V DC ( $\pm 20\%$ ), max. 2 Vpp
$I_N$	Rated current	1,8 A
$I_A$	Cut-off current	2,4 A
$P_N$	Rated power	43 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +75 °C
$F_Z$	Pulling force max.	1.200 N
$F_A$	Pushing force max.	



$F_H$	Pullout force	5.000 N (fastening depended)
	Chain	stainless steel
	Connecting cable	non-halogen, grey 5 x 0,5 mm <sup>2</sup> , ~ 5 m
v	Speed	$s = 400$ 8,0 mm/s     8,0 mm/s $s = 500 - 600$ 12,0 mm/s     8,0 mm/s
s	Stroke	400 – 600 mm ( $\pm 5\%$ )
L	Length	see order data
LM	Distance in between chains	see order data
	Sound pressure level A	$\leq 70$ dB (A)

**In delivery**

- 1    2x countersunk screws M8x16, 2x Spacer ring (brass)
- 2    2x chain unlocking key
- 3    blind plug for unused cable entry
- 4    2x blind plugs for chain unlocking points
- 5    warning sign sticker „Risk of entrapment“

ORDER DATA							
s [mm]	L [mm]	LM [mm]	Version	Finish	PU/pcs.	Part.-No.	
400	1100	485	KSA TWIN 400 S12 24V	E6/C-0	1	524845	
500	1303	587	KSA TWIN 500 S12 24V	E6/C-0	1	524855	
600	1303	587	KSA TWIN 600 S12 24V	E6/C-0	1	524865	

OPTIONS			
Special model	PU/pcs.	Part.-No.	
<b>Drive housing painted/powder coated in other RAL colours</b>			
<b>Lump sum for coating</b>		516030	
<b>Specify at order stage:</b>	1 – 20	516004	
	21 – 50	516004	
	51 – 100	516004	
	up 101	516004	
<b>Extra length connecting cable:</b>			
10 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>		501056	
<b>Microprocessor programming S12</b>			
Electronic stroke reduction 24V S12		524190	
Programming drives 24V / 230V S12		524180	
<b>Optional accessories</b>			
M-COM Configuration module for synchronised multi-drive systems	1	524177	

- Application: natural ventilation, SHEV
- Internal Intelligent Control Electronics S12

### Options

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with locking drives (S3 / S12)



### TECHNICAL DATA

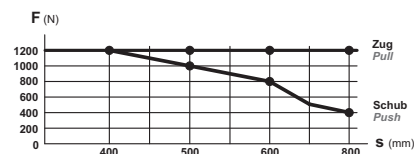
$U_N$	Rated voltage	24V DC ( $\pm 20\%$ ), max. 2 Vpp
$I_N$	Rated current	1,8 A
$I_A$	Cut-off current	2,4 A
$P_N$	Rated power	43 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)

	Protection rating	IP 32
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	Ambient temperature range	-5 °C ... +75 °C
--	---------------------------	------------------

$F_Z$	Pulling force max.	1.200 N
-------	--------------------	---------

$F_A$	Pushing force	
-------	---------------	--



$F_H$	Pullout force	5.000 N (fastening depended)
-------	---------------	------------------------------

	Chain	Stainless steel
--	-------	-----------------

	Connecting cable	non-halogen, grey- 5 x 0,5 mm <sup>2</sup> , ~ 5 m
--	------------------	--

v	Speed	$s = 400$ 8,0 m/s    8,0 m/s $s = 500 - 600$ 12,0 m/s    8,0 m/s $s > 600$ 13,5 m/s    8,0 m/s
---	-------	--

s	Stroke	400 – 800 mm ( $\pm 5\%$ )
---	--------	----------------------------

L	Length	see order data
---	--------	----------------

LM	Distance in between chains	see order data
----	----------------------------	----------------

	Sound pressure level A	$\leq 70$ dB (A)
--	------------------------	------------------

### Components packed with drive

2x Countersunk-head screw M8x16, 2x Spacer ring (brass)



ORDER DATA							
s [mm]	L [mm]	LM [mm]	Version	Finish	PU/pcs.	Part.-No.	
400	737	297	KSA D 400 S12 24V	E6/C-0	1	522140	
500	837	397	KSA D 500 S12 24V	E6/C-0	1	522150	
600	837	397	KSA D 600 S12 24V	E6/C-0	1	522160	
800	942	502	KSA D 800 S12 24V	E6/C-0	1	522180	

OPTIONS							
Special model		PU/pcs.	Part.-No.				
<b>Drive housing painted/powder coated in other RAL colours</b>							
Specify at order stage:		1 – 4	516004				
		5 – 9	516004				
		10 – 49	516004				
		50 – 99	516004				
		up 100	516004				
<b>Extra length connecting cable:</b>							
10 m – non-halogen, grey– 5 x 0,5 mm <sup>2</sup>			501056				
<b>Microprocessor programming S12</b>							
Electronic stroke reduction 24V S12			524190				
Programming drives 24V / 230V S12			524180				
<b>Optional accessories</b>		PU/pcs.	Part.-No.				
M-COM Configuration module for synchronised multi-drive systems		1	524177				

OVERVIEW OF BRACKETS										
Typical application			1	2	3	4	5	6		
Frame bracket			K-A1	K81-1, K87, K-C1, K-E1, K-E2	K-B1	K-B2	K-D1	K-F		
Casement bracket			F14, F16	F14, F16, F16-1, F29-2, F33, F38, F39	F14, F16					
Space requirement	min.	[mm]	35	65 – 90	45 – 55		45	30		
Overlap thickness *1		[mm]	0 – 21	irrelevant	0 – 21		0 – 21	0 – 21		
Opening angle *2	max.	[DEG]	20	60	50		40	45		
Casement weight *3	max.	[Kg]	250	130	130		130	250		
Window material		Alu	●	●	●	●	●	●		
		Wood		●	●	●	●	●		
		PVC	■		●	●	●	●		
Type of window and mounting	Bottom hung	inward	HSK	FM	●		●		●	
				RM				●		
			NSK	FM	●		●	●		
		RM						●		
		outward	HSK	RM	●		●	●		
				PR		●				
	NSK		RM	●	●	●	●			
			PR		■					
	Top hung	inward	HSK	FM	●		●	●		
				RM					●	
			NSK	FM	●		●	●		
				RM					●	
		outward	HSK	RM	●	●	●	●		
				PR						
			NSK	RM	●		●	●		
				PR		●				
	Side hung	inward	HSK	FM	●		●	●		
				RM					●	
			NSK	FM	●		●	●		
		RM						●	●	
									●	
Roof		outward	HSK	RM	■		■	■		
	PR				■					
	NSK		RM	■		■	■			
			PR		■					
PAF	outward		RM	●		●	●			
Concealed										
FAB*4	Solo	[mm]					700 – 1300			
	Sync2	[mm]					1250 – 2500			
FAH*4	Solo	[mm]					450 – 1500			
	Sync2	[mm]					250 – 2500			

### LEGEND

● suitable ■ not recommended

\*1 Window sizes and opening angles may be different.

\*2 Sample values of the opening angle evaluated on the basis of FAB/FAH for inward opening windows with drives mounted at the main closing edge.

For any other window heights, for outward opening windows and for windows with drives mounted at the side edges the opening angle will vary.

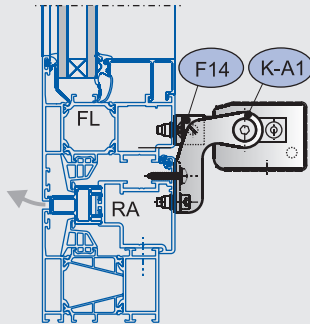
\*3 Please respect the individual geometry of the different windows. The listed max. casement weight refers to a single drive on button hung window with a max. opening angle.

\*4 Sample value of the casement dimensions for corner joints of 110 mm. The actual casement dimensions depend on length of the corner joints, profile dimensions, stroke and position of the drives.

The values of FAB/FAH are to be used analogue for side hung windows.

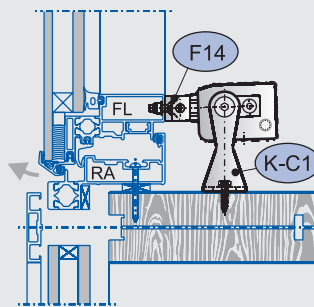
TYPICAL APPLICATIONS

1 RM, top hung, outward opening



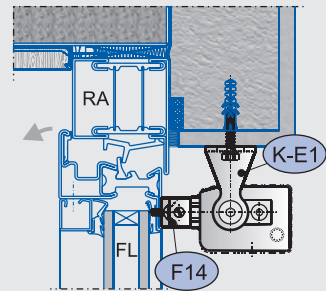
View on aluminium window

2 PR, bottom hung, inward opening



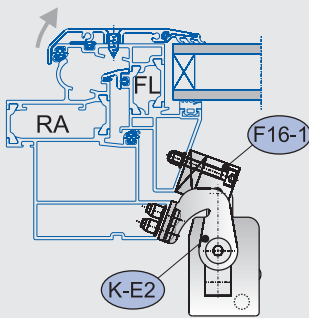
View on aluminium window

2 PR, bottom hung, outward opening



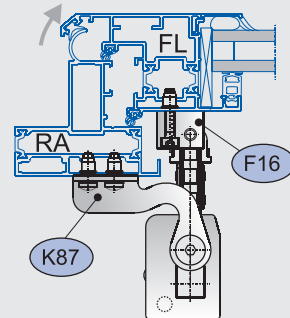
View on aluminium window

2 RM, roof



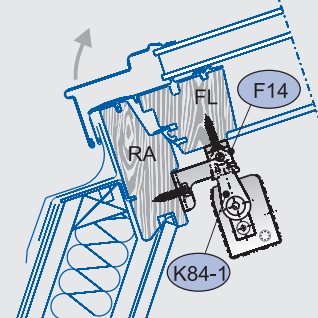
View on aluminium window

2 RM, roof



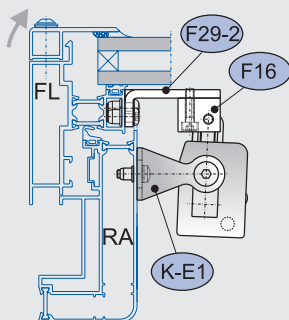
View on aluminium window

2 RM, roof



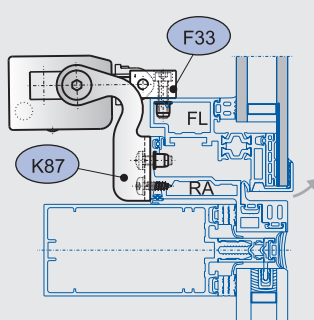
View on wooden window

2 RM, roof



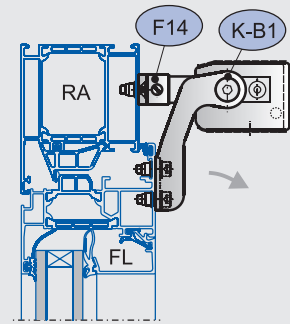
View on aluminium window

2 RM, top hung, outward opening



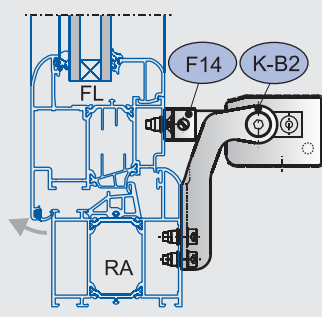
View on aluminium window

3 FM, bottom hung, inward opening



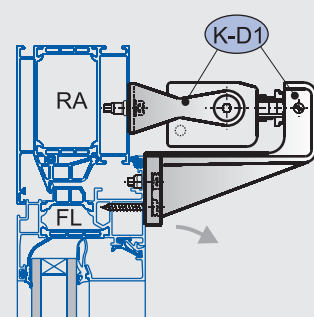
View on aluminium window

4 RM, top hung, outward opening



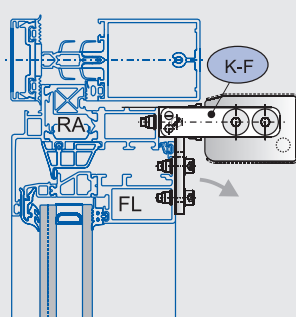
View on aluminium window

5 RM, bottom hung, inward opening



View on aluminium window

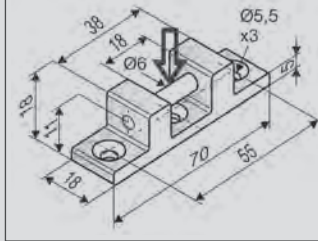
6 FM, bottom hung, inward opening



View on aluminium window

### CASEMENT BRACKETS

F14



**Application**

**Surface mounting** on the case-ment/window frame profiles of in-/outward opening windows, for surface mounted drives

**KSA** with **K-A1, K-B1, K-B2, K-C1, K-E1; K-E2, K-F, K84-1**

Chain fixing in direction of the arrow

**Part.-No. 524202**

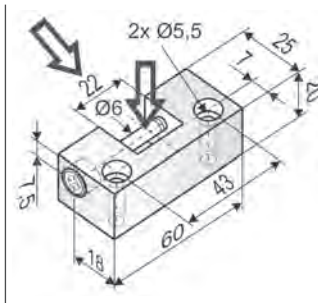
**Material/Finish**

aluminium (natural anodized)

**Feature/Equipment**

1x grubscrew M6x35

F16



**Application**

**Surface mounting** on the case-ment/window frame profiles of in-/outward opening windows (e.g. friction hinged or roof win-dows), for surface mounted drives

**KSA** with **K-A1, K-B1, K-B2, K-E1, K-E2 K84-1, K87**

Chain fixing in direction of the arrow

**Part.-No. 524204**

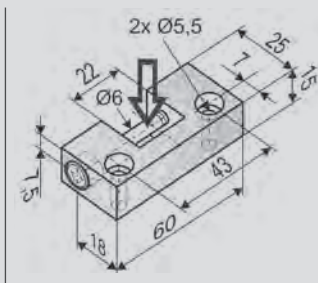
**Material/Finish**

aluminium (natural anodized)

**Feature/Equipment**

1x cylinder head screw M6x50

F33



**Application**

**Surface mounting** on the case-ment profile of outward opening windows (e.g. friction hinged or roof windows), for surface mounted drives

**KSA** with **K-A1, K-B1, K-B2, K-E1, K84-1, K87**

Chain fixing in direction of the arrow

**Part.-No. 524203**

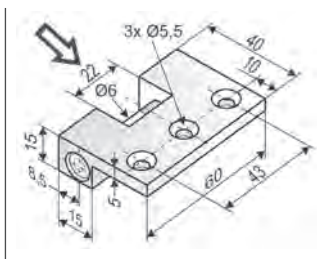
**Material/Finish**

aluminium (natural anodized)

**Feature/Equipment**

1x cylinder head screw M6x50

F38



**Application**

**Surface mounting** on the case-ment profile of outward open-ing friction hinged windows, for surface mounted drives

**KSA** with **K-A1, K-B1, K87**

Chain fixing in direction of the arrow

**Part.-No. 524199**

**Material/Finish**

aluminium (natural anodized)

**Feature/Equipment**

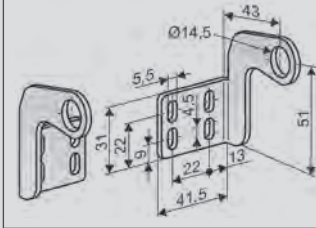
1x cylinder head screw M6x5

## CASEMENT BRACKETS

<b>F39</b>		<p><b>Application</b></p> <p><b>Surface mounting</b> on the caseiment profile of outward opening roof windows, for surface mounted drives <b>KSA</b> with <b>K-A1, K-B1, K-B2, K-E1, K84-1</b></p> <p>Chain fixing in direction of the arrow</p>	<p><b>Part.-No. 524295</b></p> <p><b>Material/Finish</b> aluminium (natural anodized)</p> <p><b>Feature/Equipment</b> 1x cylinder head screw M6x50</p>			
<p><b>Optional accessories</b></p> <p><b>B2</b> Base Plate F39/F40</p>			<p><b>Part.-No. 155173</b></p>			

### FRAME BRACKETS

**K-A1**



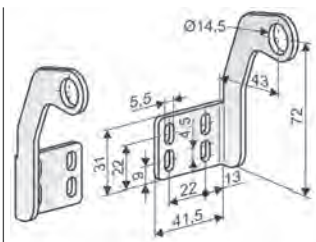
**Application**

**Surface mounting** on the case-ment/window frame profiles of in-/outward opening windows, for swivelly fixing of drives **KSA** with **F 4, F 6, F33, F39** (Required space on frame profile **35 mm**)

**Part.-No. 524057**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
1x right,  
1x left

**K-B1**



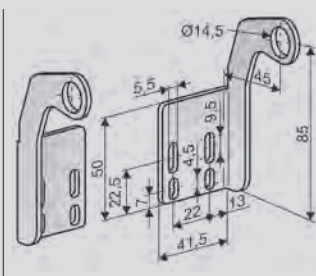
**Application**

**Surface mounting** on the case-ment/ window frame profiles of in-/outward opening windows, for swivelling fixing of drives **KSA** with **F14, F16, F33, F39** (Required space on frame profile **35 – 52 mm**)

**Part.-No. 524053**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
1x right,  
1x left

**K-B2**



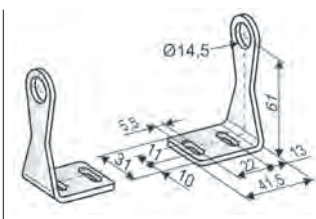
**Application**

**Surface mounting** on the case-ment/ window frame profiles of in-/outward opening (wooden) windows, for swivelling fixing of drives **KSA** with **F14, F16, F33, F39** (Required space on frame profile **35 – 52 mm**)

**Part.-No. 524063**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
1x right,  
1x left

**K-C1**



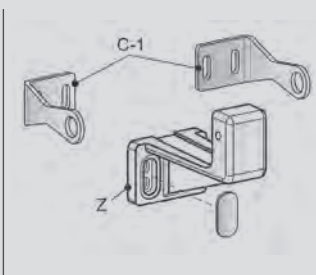
**Application**

**Surface mounting** on the case-ment/window frame profiles or on the mullion/transom of outward opening windows, for swivelling fixing of drives **KSA** with **F14, F16, F33, F39**

**Part.-No. 524054**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
1x right,  
1x left

**K-D1**



**Application**

**Surface mounting** on the case-ment and frame profile of inward opening windows, for swivelling fixing of drives **KSA** on the frame profile (required space **50 mm**)

**Part.-No. 524055**

**Material/Finish**  
Stainless steel (C-1),  
Aluminum casting (Z)  
**Feature/Equipment**  
1x C-1,  
1x Z

**Accessories for**

**F73** Casement bracket „Z“

**Part.-No. 524221**

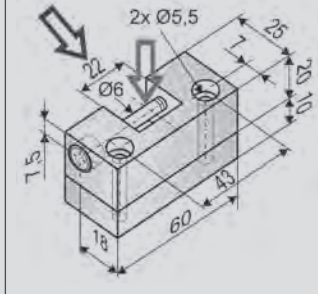
## FRAME BRACKETS

K-E1		<p><b>Application</b></p> <p><b>Surface mounting</b> on the mullion/transom of outward opening windows, for swiveling fixing of drives <b>KSA</b> with <b>F14, F16, F33, F39</b></p>	<p><b>Part.-No. 524056</b></p> <p><b>Material/Finish</b> Stainless steel</p> <p><b>Feature/Equipment</b> 1x right, 1x left</p>			
K-E2		<p><b>Application</b></p> <p><b>Surface mounting</b> on the window frame profiles or on the mullions/transoms of outward opening roof windows, for swiveling fixing of drives <b>KSA</b> with <b>F14, F16, F33, F39</b></p>	<p><b>Part.-No. 524066</b></p> <p><b>Material/Finish</b> Stainless steel</p> <p><b>Feature/Equipment</b> 1x right, 1x left</p>			
K-F		<p><b>Application</b></p> <p><b>Surface mounting</b> on the casement and frame profile of inward opening bottom hung windows, for rigid fixing of drives <b>KSA</b> on the frame profile (required space on frame profile <b>29 mm, FÜ 10 mm</b>)</p>	<p><b>Part.-No. 524211</b></p> <p><b>Material/Finish</b> aluminium (natural anodized)</p> <p><b>Feature/Equipment</b> 4x countersunk-head screw M8x16 + 1x F14</p>			
K84-1		<p><b>Application</b></p> <p><b>Surface mounting</b> on the window frame profiles or on the mullions/transoms of outward opening roof windows, for swiveling fixing of drives <b>KSA</b> with <b>F14, F16, F33, F39</b></p>	<p><b>Part.-No. 524224</b></p> <p><b>Material/Finish</b> Stainless steel</p> <p><b>Feature/Equipment</b> 1x right, 1x left</p>			

### SPECIFIC APPLICATIONS

#### ROOF WINDOWS | SCHÜCO AWS 57RO

**F16-1**



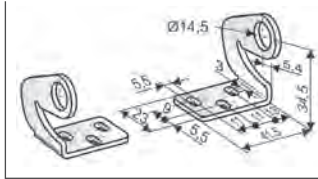
**Application**

**Surface mounting** on the window frame profiles of outward opening roof windows series **Schüco AWS 57RO**, for fixing of drives **KSA**

**Part.-No. 155171**

**Material/Finish**  
aluminium  
(natural anodized)  
**Feature/Equipment**  
1x cylinder head screw  
M6x50 with base plate

**K-E2**



**Application**

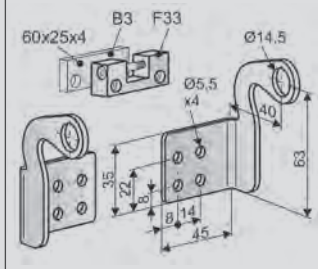
**Surface mounting** on the window frame profiles or on the mullions/transoms of outward opening roof windows, for swivelling fixing of drives **KSA** with **F14, F16, F33, F39**

**Part.-No. 524066**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
1x right,  
1x left

#### FRICTION HINGED WINDOWS | SCHÜCO FW50

**K87**



**Application**

**Surface mounting** on the window frame profiles of outward opening friction hinged windows **Schüco FW50+**, for swivelling fixing of drives **KSA** (Required space on frame profile **35 mm**)

**Part.-No. 524319**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
1x right,  
1x left,  
incl. F33 + B3



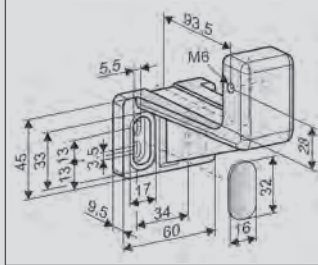
## SPECIFIC APPLICATIONS

ROOF WINDOWS   HEROAL 085 / 180				
F29-2		<b>Application</b> Surface mounting on the window frame profiles of outward opening roof windows series <b>Heroal 085 / 180</b> , for fixing of drives <b>KSA</b> with <b>F16</b>	<b>Part.-No.</b> 155157 <b>Material/Finish</b> Stainless steel <b>Feature/Equipment</b> 2x cylinder head screw M6x20	
F16		<b>Application</b> Surface mounting on the casement/window frame profiles of in-/outward opening windows (e.g. friction hinged or roof windows), for surface mounted drives <b>KSA</b> with <b>K-A1, K-B1, K-B2, K-E1, K-E2, K84-1, K87</b>  Chain fixing in direction of the arrow	<b>Part.-No.</b> 524204 <b>Material/Finish</b> aluminium (natural anodized) <b>Feature/Equipment</b> 1x cylinder head screw M6x50	
K-E2		<b>Application</b> Surface mounting on the window frame profiles or on the mullions/transoms of outward opening roof windows, for swivelling fixing of drives <b>KSA</b> with <b>F14, F16, F33, F39</b>	<b>Part.-No.</b> 524066 <b>Material/Finish</b> Stainless steel <b>Feature/Equipment</b> 1x right, 1x left	
SKYLIGHT DOME				
B1		<b>Application</b> Mounting angle for mounting of drives <b>KS2</b> with <b>F21</b> and <b>KSA</b> with <b>F14</b> on skylight domes	<b>Part.-No.</b> 151422 <b>Material/Finish</b> Stainless steel <b>Feature/Equipment</b> 1x countersunk-head screw M5x12, 3x nut M5	
K125		<b>Application</b> Surface mounting on the upstand of skylight domes for fixing of drives <b>KS2</b> and <b>KSA</b> with <b>B1</b>	<b>Part.-No.</b> 523979 <b>Material/Finish</b> Stainless steel <b>Feature/Equipment</b> 4x screw M5x10	

### OPTIONAL ACCESSORIES

#### Casement bracket „Z“

F73



**Application**

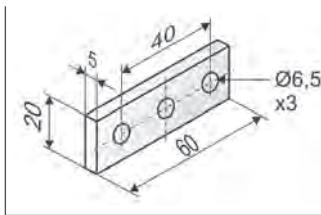
**Surface mounting** on the casement profiles of inward opening windows, for surface mounted drives **KSA** with **K-C1**

**Part.-No. 524221**

**Material/Finish**  
cast aluminium (RAL 9007)  
**Feature/Equipment**  
1x grub screw M5x35  
2x cover plate, adhesive

#### Base Plate F39/F40

B2



**Application**

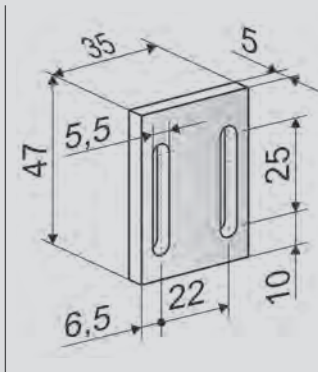
**Support** for **F39** and **F40** as packing plate for mounting on the casement profiles of outward opening roof windows

**Part.-No. 155173**

**Material/Finish**  
aluminium  
(natural anodized)  
**Feature/Equipment**  
60 x 20 x 5 mm

#### Base Plate K-F

B3



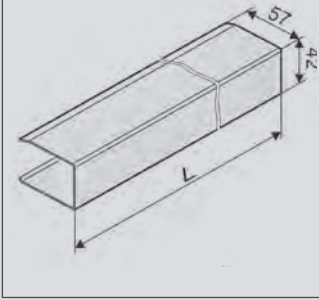
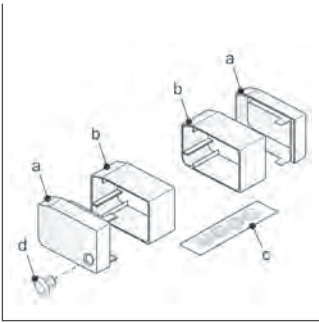
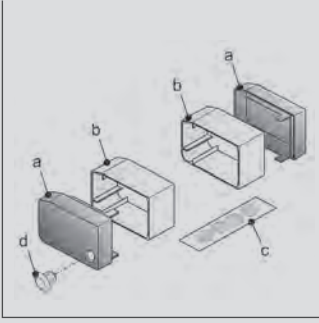
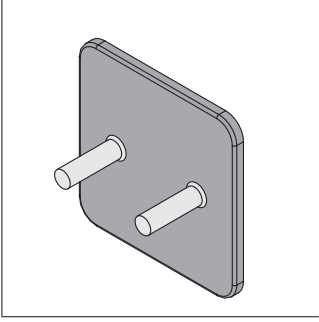
**Application**

**Support** for frame bracket set **K-F** as packing plate for mounting of drives **KS2** on the casement profiles with casement overlap thickness **FÜ < 10 mm**

**Part.-No. 524222**

**Material/Finish**  
aluminium  
**Feature/Equipment**  
for casement bracket F14  
2x t= 3 mm, 1x t= 5 mm,  
for frame brackets  
4x t = 5 mm

## OPTIONAL ACCESSORIES

Cover-profile Set			
<b>AP-KSA</b> 	<b>Application</b> <b>Cover profile</b> for surface mounted drives <b>KSA</b> with frame bracket sets <b>K-A1, K-B1, K-B2, K-E2, K84-1</b> . Profile length adjustable to the length of the drives or of the casement	<b>Material/Finish</b> aluminium (natural anodized) + plastic (grey) <b>Feature/Equipment</b> incl. mounting aid for cover profile shortening on the job site + mounting set ID: 524300	
	<b>L = 1,45 m</b> (length w/o end caps)	<b>Part.-No. 524305</b>	
	<b>L = 2,90 m</b> (length w/o end caps)	<b>Part.-No. 524310</b>	
	<b>L = customized</b> (Price per metre)	<b>Part.-No. 524302</b>	
Assembly-set for cover profile (grey and caps)			
	<b>Part.-No. 524300</b> <b>Material/Finish</b> aluminium, plastic (grey) <b>Feature/Equipment</b> a. 2x end cap b. 2x spacer c. 4x stickers d. 1x dummy plug		
Assembly-set for cover profile (black and caps)			
	<b>Part.-No. 524303</b> <b>Material/Finish</b> aluminium, plastic (black)) <b>Feature/Equipment</b> a. 2x end cap b. 2x spacer c. 4x stickers d. 1x dummy plug		
Chain unlocking key			
	<b>Application</b> Manual unlocking of the drive chain for mounting of drives KSA	<b>Part.-No. 524210</b> <b>Material/Finish</b> plastic	

### OPTIONAL ACCESSORIES

#### Main control unit

##### M-COM



##### Application

Configuration module for automatic configuration and surveillance of max. 6 opening or locking drives version S12 / S3 in synchronised multi-drive systems

##### Rated voltage:

24 V DC +/- 20%, (max. 2 Vss)

**Current consumption:** <12 mA

**Drive type:** S12

##### Part.-No. 524177

##### Protection rating

IP30 rubber envelope

##### Ambient temperature range

0 °C ... + 70 °C

##### Dimensions

45 x 17 x 6 mm

##### Connecting wires

3 wires 0,5 mm<sup>2</sup> x 50 mm

##### Feature/Equipment

Printed circuit board with components and connection wires to be installed in connection box to be supplied on site

Special model	PU/pcs.	Part.-No.		
<b>Casement brackets painted / powder coated in other RAL colours</b>				
Lump sum for coating		<b>516030</b>		
Specify at order stage:	1 – 20	<b>516032</b>		
	21 – 50	<b>516032</b>		
	51 – 100	<b>516032</b>		
	up 101	<b>516032</b>		
<b>Frame brackets painted / powder coated in other RAL colours</b>				
Lump sum for coating		<b>516030</b>		
Specify at order stage:	1 – 20	<b>516031</b>		
	21 – 50	<b>516031</b>		
	51 – 100	<b>516031</b>		
	up 101	<b>516031</b>		

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