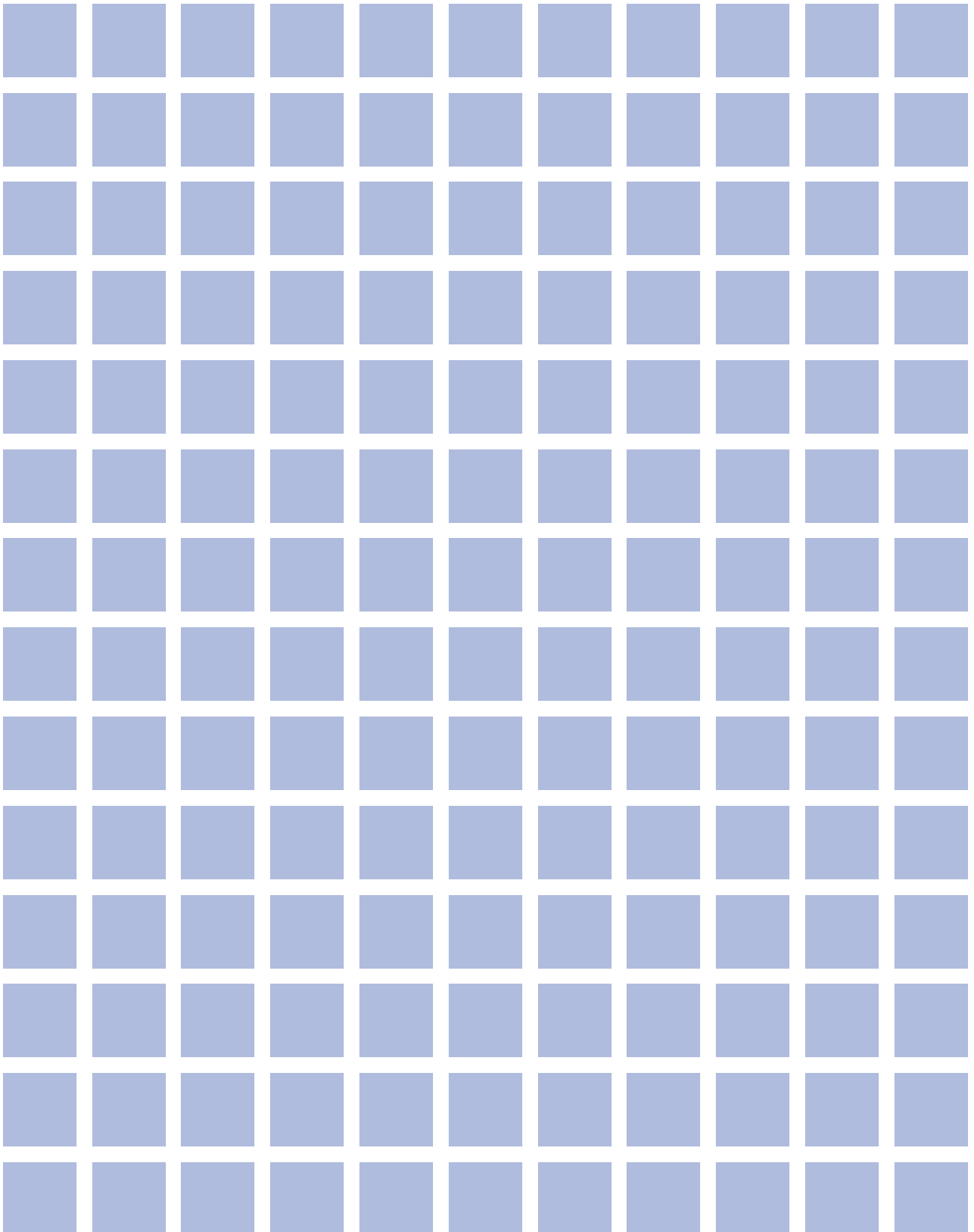


# 1

## Chain drives



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	200 – 800	200 – 50	200	10,0	10,0	600	0,7	●	■	●					
			230	200 – 800	200 – 50	200	10,0	10,0	600	0,7	●	■	●					
		S12	24	200 – 800	250 – 50	250	8,0 – 13,5	8,0	800	1,0	●	●	●	●	■	■	●	●
			230	200 – 800	250 – 50	250	8,0	8,0	450	0,2	●			●	■	■	●	■
	TWIN	S12	24	200 – 600	500 – 100	500	8,0 – 13,5	8,0	600	1,4	●	●		●	■	■	●	●
	KS4	Solo	S12	24	200 – 800	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	●	●		●	■	■	●	●

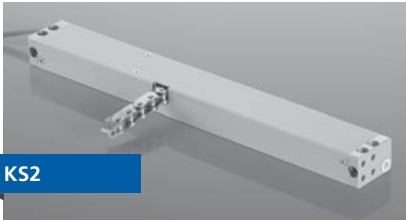
### LEGEND

● suitable    ■ not recommended

S2 internal load dependend cut-off switch

S12 internal intelligent cut-off switch for synchronised run and programmable functions

force and speed depend on the stroke



KS2



KS2 TWIN

**KS2 CHAIN DRIVES**

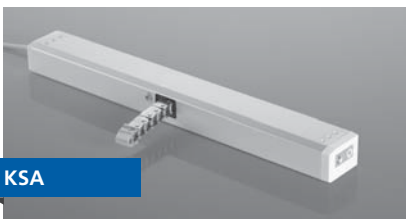
- Model 24V DC, S2/S12 and 230V AC, S12
- Pulling/Pushing force max. 250 N (TWIN 500 N)
- Stroke length 50 – 800 mm – programmable
- Speed 5 – 14 mm/s – programmable
- Housing (WxH) 42 x 26 mm, Length depending on stroke
- Opening mechanism Rigid back stainless steel sidebow roller chain
- Version R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



KS4

**KS4 CHAIN DRIVES**

- Model 24V DC, S12
- Pulling/Pushing force max. 400 N
- Stroke length 50 – 800 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



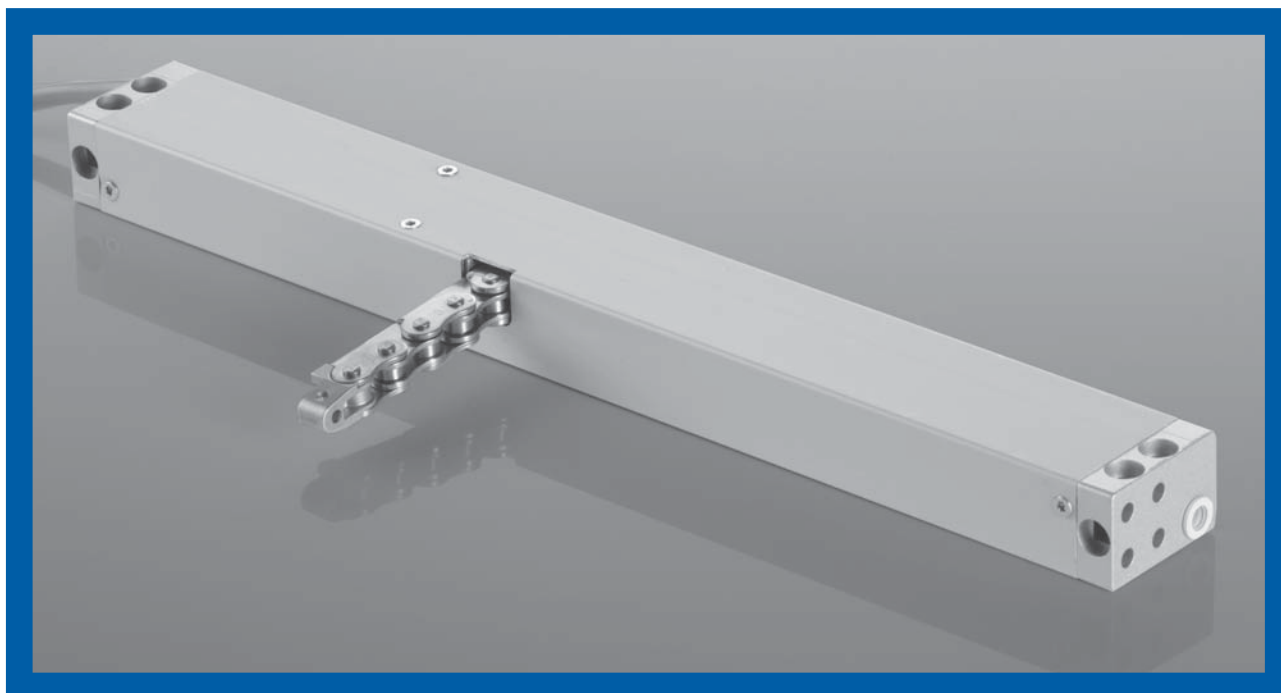
KSA TWIN



KSA D

**KSA CHAIN DRIVES**

- Model 24V DC, S12 and 230V AC, S12
- Pulling/Pushing force max. 600 N (TWIN 1200 N)
- Stroke length 50 – 1500 mm – programmable
- 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

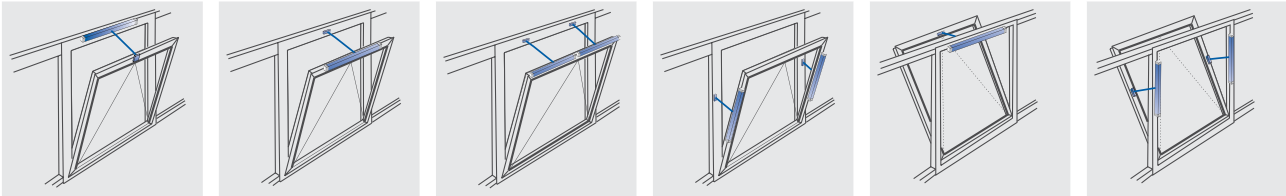


### PRODUCT FEATURES KS2

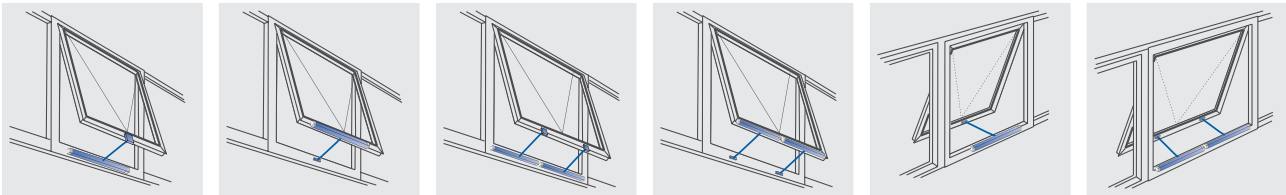
- For natural ventilation, smoke and heat exhausting systems and ferralux® NSHEV (EN12101-2)
- Versions R (right) or L (left) or TWIN
- Aluminium housing anodized or RAL9016 finish, optional powder-coating according to RAL
- High-quality stainless steel sidebow roller chain
- Slim line body that suits concealed fitting within profiles
- Rigid drive mounting on frame without brackets
- Programmable parameters of intelligent S12 electronic cut-off switch
  - 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

**FACADE**

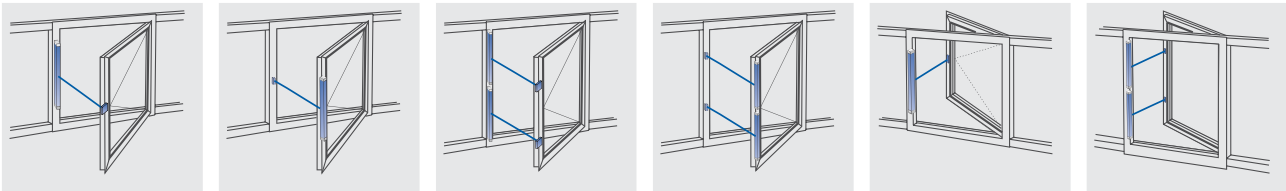
Bottom-hung



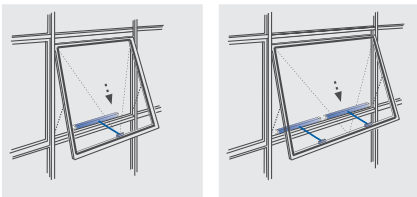
Top-hung



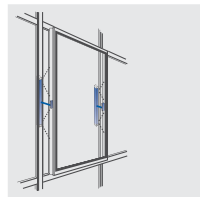
Side-hung



Friction hinged

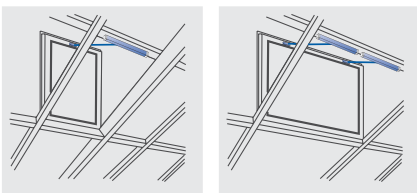


Parallel outward opening

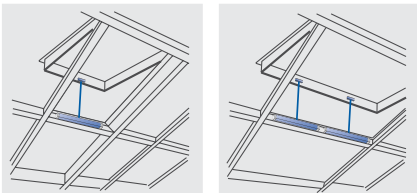


**ROOF**

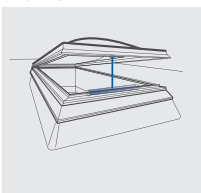
Bottom-hung

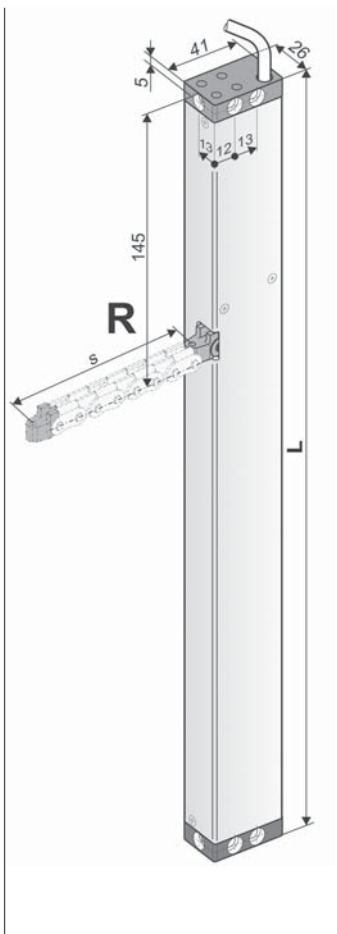


Top-hung



Sky light

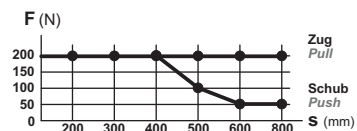




- Application: Natural ventilation as single-drive
- Internal load dependent cut-off switch S2 in OPEN / CLOSE direction

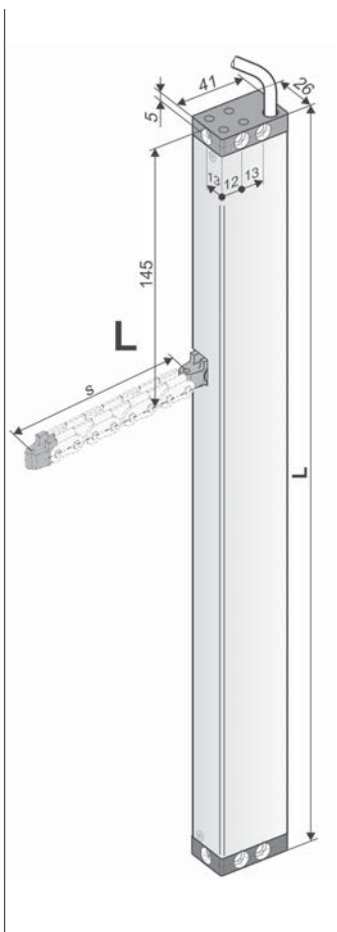
### TECHNICAL DATA

$U_N$	Rated voltage	24V DC ( $\pm 20\%$ ), max. 2 Vpp
$I_N$	Rated current	0,5 A
$I_A$	Cut-off current	0,7 A
$P_N$	Rated power	12 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.	200 N
$F_A$	Pushing force	



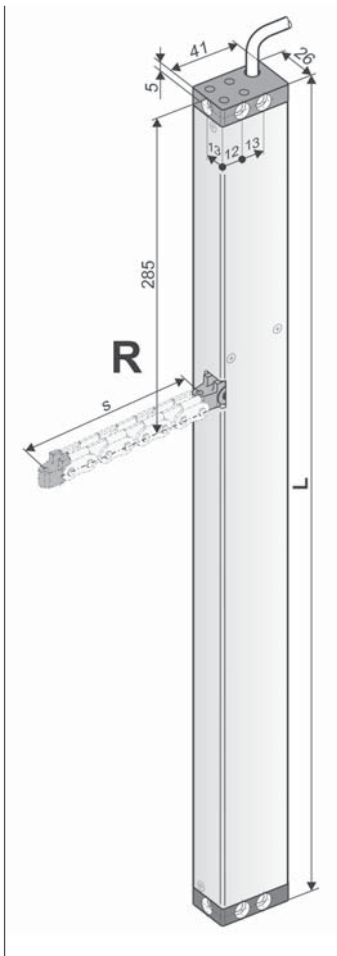
s > 600 mm only for pulling application

$F_H$	Pullout force	1.800 N (fastening depended)
	Chain	Stainless steel
	Connecting cable	non-halogen, grey 3 x 0,75 mm <sup>2</sup> , ~ 3 m
v	Speed	10,0 mm/s  10,0 mm/s
s	Stroke	200 – 800 mm ( $\pm 5\%$ )
L	Length	see order data



ORDER DATA							
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.		
						LZ	
200	335	KS2 200 S2 24V R	E6/C-0	1	521120	●	
			RAL 9016	1	1001521120	○	
		KS2 200 S2 24V L	E6/C-0	1	521420	○	
			RAL 9016	1	1001521420	○	
300	380	KS2 300 S2 24V R	E6/C-0	1	521130	●	
			RAL 9016	1	1001521130	○	
		KS2 300 S2 24V L	E6/C-0	1	521430	○	
			RAL 9016	1	1001521430	○	
400	430	KS2 400 S2 24V R	E6/C-0	1	521140	●	
			RAL 9016	1	1001521140	○	
		KS2 400 S2 24V L	E6/C-0	1	521440	○	
			RAL 9016	1	1001521440	○	
500	545	KS2 500 S2 24V R	E6/C-0	1	521150	●	
			RAL 9016	1	1001521150	○	
		KS2 500 S2 24V L	E6/C-0	1	521450	○	
			RAL 9016	1	1001521450	○	
600	545	KS2 600 S2 24V R	E6/C-0	1	521160	●	
			RAL 9016	1	1001521160	○	
		KS2 600 S2 24V L	E6/C-0	1	521460	○	
			RAL 9016	1	1001521460	○	
800	625	KS2 800 S2 24V R	E6/C-0	1	521180	●	
			RAL 9016	1	1001521180	○	
		KS2 800 S2 24V L	E6/C-0	1	521480	○	
			RAL 9016	1	1001521480	○	

OPTIONS							
Special model			PU/pcs.	Part.-No.			
<b>Drive housing painted/powder coated in other RAL colours</b>						LZ	
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>							
5 m – non-halogen, grey – 2 x 0,75 mm <sup>2</sup>				501024	○		
10 m – non-halogen, grey – 2 x 0,75 mm <sup>2</sup>				501026	○		

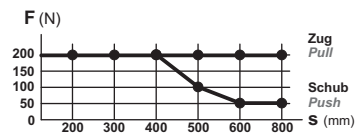


- Application: Natural ventilation as single-drive
- Internal load dependent cut-off switch S2 in OPEN / CLOSE direction
- Parallel connection up to 8 drives in one group

### TECHNICAL DATA

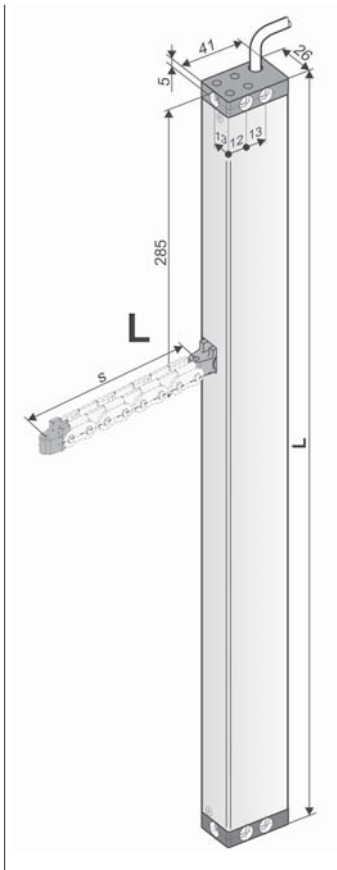
$U_N$	Rated voltage	230V AC (50 Hz)
$I_N$	Rated current	0,13 A
$I_A$	Cut-off current	0,2 A
$P_N$	Rated power	30 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +60°C
$F_Z$	Pulling force max.	200 N

$F_A$  Pushing force



s > 600 mm only for pulling application

$F_H$	Pullout force	1.800 N (fastening depended)
	Chain	Stainless steel
	Connecting cable	non-halogen, grey 6 x 0,75 mm <sup>2</sup> , ~ 3 m
v	Speed	$\nabla$ 10,0 mm/s $\rightarrow$ 10,0 mm/s
s	Stroke	200 – 800 mm (± 5 %)
L	Length	see order data



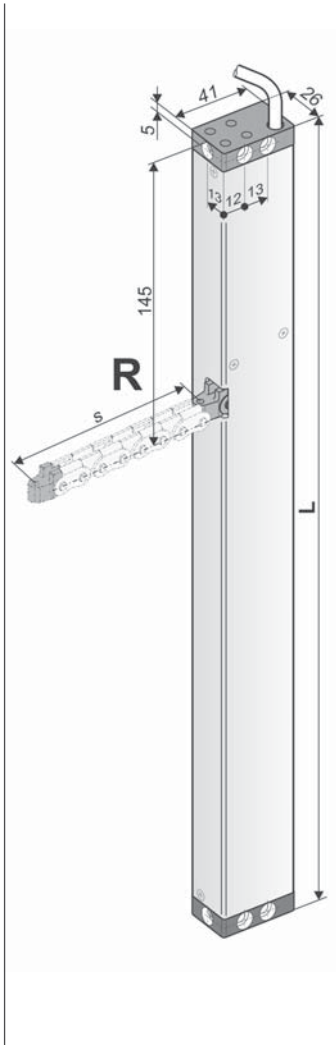
ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
						LZ
200	475	KS2 200 S2 230V R	E6/C-0	1	494920	●
			RAL 9016	1	1001494920	○
		KS2 200 S2 230V L	E6/C-0	1	494720	○
			RAL 9016	1	1001494720	○
300	520	KS2 300 S2 230V R	E6/C-0	1	494930	●
			RAL 9016	1	1001494930	○
		KS2 300 S2 230V L	E6/C-0	1	494730	○
			RAL 9016	1	1001494730	○
400	570	KS2 400 S2 230V R	E6/C-0	1	494940	●
			RAL 9016	1	1001494940	○
		KS2 400 S2 230V L	E6/C-0	1	494740	○
			RAL 9016	1	1001494740	○
500	685	KS2 500 S2 230V R	E6/C-0	1	494950	●
			RAL 9016	1	1001494950	○
		KS2 500 S2 230V L	E6/C-0	1	494750	○
			RAL 9016	1	1001494750	○
600	685	KS2 600 S2 230V R	E6/C-0	1	494960	●
			RAL 9016	1	1001494960	○
		KS2 600 S2 230V L	E6/C-0	1	494760	○
			RAL 9016	1	1001494760	○
800	765	KS2 800 S2 230V R	E6/C-0	1	494980	●
			RAL 9016	1	1001494980	○
		KS2 800 S2 230V L	E6/C-0	1	494780	○
			RAL 9016	1	1001494780	○

OPTIONS						
Special model		PU/pcs.	Part.-No.			
<b>Drive housing painted/powder coated in other RAL colours</b>					LZ	
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>						
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			

- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Internal intelligent cut-off switch S12
- Z-Version: Programmable feedback limit position „OPEN“ and „CLOSE“ (max. 24 V, 500 mA)

### Options

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)



### TECHNICAL DATA

$U_N$	Rated voltage	24V DC ( $\pm 20\%$ ), max. 2 Vpp									
$I_N$	Rated current	0,7 A									
$I_A$	Cut-off current	1,0 A									
$P_N$	Rated power	17 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.	250 N									
$F_A$	Pushing force										
		s > 600 mm only for pulling application									
$F_H$	Pullout force	1.800 N (fastening depended)									
	Chain	Stainless steel									
	Connecting cable	non-halogen, grey 3 x 0,5 mm <sup>2</sup> , ~ 3 m Z-Version: 5 x 0,5 mm <sup>2</sup> ~ 3 m									
v	Speed	<table border="0"> <tr> <td>s &lt; 400</td> <td> 8,0 mm/s</td> <td> 8,0 mm/s</td> </tr> <tr> <td>s 500 – 600</td> <td> 12,0 mm/s</td> <td> 8,0 mm/s</td> </tr> <tr> <td>s &gt; 600</td> <td> 13,5 mm/s</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	200 – 800 mm ( $\pm 5\%$ )									
L	Length	see order data									

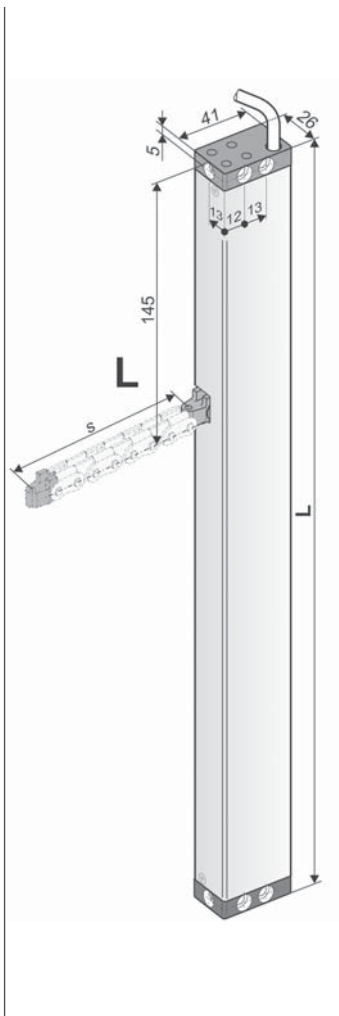
ORDER DATA							
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.		
						LZ	
200	335	KS2 200 S12 24V R	E6/C-0	1	521620	●	
			RAL 9016	1	1001521620	○	
		KS2 200 S12 24V R Z	E6/C-0	1	521623	○	
			RAL 9016	1	1001521623	○	
300	380	KS2 300 S12 24V R	E6/C-0	1	521630	●	
			RAL 9016	1	1001521630	○	
		KS2 300 S12 24V R Z	E6/C-0	1	521633	○	
			RAL 9016	1	1001521633	○	
400	430	KS2 400 S12 24V R	E6/C-0	1	521640	●	
			RAL 9016	1	1001521640	○	
		KS2 400 S12 24V R Z	E6/C-0	1	521643	○	
			RAL 9016	1	1001521643	○	
500	545	KS2 500 S12 24V R	E6/C-0	1	521650	●	
			RAL 9016	1	1001521650	○	
		KS2 500 S12 24V R Z	E6/C-0	1	521653	○	
			RAL 9016	1	1001521653	○	
600	545	KS2 600 S12 24V R	E6/C-0	1	521660	●	
			RAL 9016	1	1001521660	○	
		KS2 600 S12 24V R Z	E6/C-0	1	521663	○	
			RAL 9016	1	1001521663	○	
800	625	KS2 800 S12 24V R	E6/C-0	1	521680	●	
			RAL 9016	1	1001521680	○	
		KS2 800 S12 24V R Z	E6/C-0	1	521683	○	
			RAL 9016	1	1001521683	○	

OPTIONS							
Special model	PU/pcs.	Part.-No.					
<b>Drive housing painted/powder coated in other RAL colours</b>			LZ				
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>							
5 m – non-halogen, grey – 3 x 0,5 mm <sup>2</sup>		501034	○				
10 m – non-halogen, grey – 3 x 0,5 mm <sup>2</sup>		501036					
5 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>		501054	○				
10 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>		501056					
<b>Microprocessor programming S12</b>							
Electronic stroke reduction		524190	○				
Special functions		524180					
Optional accessories	PU/pcs.	Part.-No.					
M-COM Comm. module for synchronised multi-drive systems	1	524177	●				

- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Internal intelligent cut-off switch S12
- Z-Version: Programmable feedback limit position „OPEN“ and „CLOSE“ (max. 24 V, 500 mA)

### Options

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)



### TECHNICAL DATA

$U_N$	Rated voltage	24V DC ( $\pm 20\%$ ), max. 2 Vpp									
$I_N$	Rated current	0,7 A									
$I_A$	Cut-off current	1,0 A									
$P_N$	Rated power	17 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.	250 N									
$F_A$	Pushing force										
		s > 600 mm only for pulling application									
$F_H$	Pullout force	1.800 N (fastening depended)									
	Chain	Stainless steel (1.4310)									
	Connecting cable	non-halogen, grey 3 x 0,5 mm <sup>2</sup> , ~ 3 m Z-Version: 5 x 0,5 mm <sup>2</sup> ~ 3 m									
v	Speed	<table border="0"> <tr> <td>s &lt; 400</td> <td> 8,0 mm/s</td> <td> 8,0 mm/s</td> </tr> <tr> <td>s 500 – 600</td> <td> 12,0 mm/s</td> <td> 8,0 mm/s</td> </tr> <tr> <td>s &gt; 600</td> <td> 13,5 mm/s</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	200 – 800 mm ( $\pm 5\%$ )									
L	Length	see order data									

ORDER DATA							
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.		
						LZ	
200	335	KS2 200 S12 24V L	E6/C-0	1	521720	●	
			RAL 9016	1	1001521720	○	
		KS2 200 S12 24V L Z	E6/C-0	1	521723	○	
			RAL 9016	1	1001521723	○	
300	380	KS2 300 S12 24V L	E6/C-0	1	521730	●	
			RAL 9016	1	1001521730	○	
		KS2 300 S12 24V L Z	E6/C-0	1	521733	○	
			RAL 9016	1	1001521733	○	
400	430	KS2 400 S12 24V L	E6/C-0	1	521740	●	
			RAL 9016	1	1001521740	○	
		KS2 400 S12 24V L Z	E6/C-0	1	521743	○	
			RAL 9016	1	1001521743	○	
500	545	KS2 500 S12 24V L	E6/C-0	1	521750	●	
			RAL 9016	1	1001521750	○	
		KS2 500 S12 24V L Z	E6/C-0	1	521753	○	
			RAL 9016	1	1001521753	○	
600	545	KS2 600 S12 24V L	E6/C-0	1	521760	●	
			RAL 9016	1	1001521760	○	
		KS2 600 S12 24V L Z	E6/C-0	1	521763	○	
			RAL 9016	1	1001521763	○	
800	625	KS2 800 S12 24V L	E6/C-0	1	521780	●	
			RAL 9016	1	1001521780	○	
		KS2 800 S12 24V L Z	E6/C-0	1	521783	○	
			RAL 9016	1	1001521783	○	

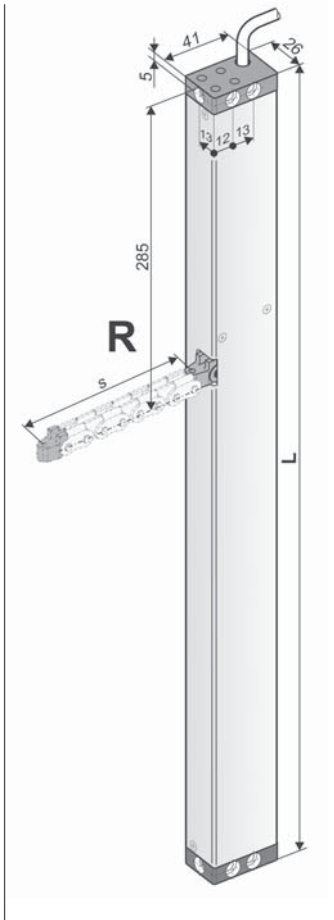
OPTIONS							
Special model		PU/pcs.	Part.-No.				
<b>Drive housing painted/powder coated in other RAL colours</b>						LZ	
Specify at order stage:		1 – 4	516004	○			
		5 – 9	516004				
		10 – 49	516004				
		50 – 99	516004				
		up 100	516004				
<b>Extra length connecting cable:</b>							
5 m – non-halogen, grey – 3 x 0,5 mm <sup>2</sup>			501034	○			
10 m – non-halogen, grey – 3 x 0,5 mm <sup>2</sup>			501036				
5 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>			501054	○			
10 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>			501056				
<b>Microprocessor programming S12</b>							
Electronic stroke reduction			524190	○			
Special functions			524180				
<b>Optional accessories</b>			PU/pcs.	Part.-No.			
M-COM Comm. module for synchronised multi-drive systems			1	524177	●		



- Application: natural ventilation
- Internal intelligent cut-off switch S12
- Parallel connection up to 8 drives in one group
- Z-Version: Programmable feedback limit position „OPEN“ and „CLOSE“ (max. 24 V, 500 mA)

### Options

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



### TECHNICAL DATA

$U_N$  Rated voltage 230V AC (50 Hz)

$I_N$  Rated current 0,13 A

$I_A$  Cut-off current 0,2 A

$P_N$  Rated power 30 W

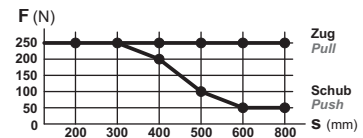
ED Duty cycle 30 % (ON: 3 min/OFF: 7 min.)

Protection rating IP 32

Ambient temperature range -5 °C ... +60 °C

$F_Z$  Pulling force max. 250 N

$F_A$  Pushing force



s > 600 mm only for pulling application

$F_H$  Pullout force 1.800 N (fastening depended)

Chain Stainless steel

Connecting cable non-halogen, grey 6 x 0,75 mm<sup>2</sup>, ~ 3 m

v Speed 8,0 mm/s 8,0 mm/s

s Stroke 200 – 800 mm (± 5 %)

L Length see order data

ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
						LZ
200	475	KS2 200 S12 230V R	E6/C-0	1	494020	●
			RAL 9016	1	1001494020	○
		KS2 200 S12 230V R Z	E6/C-0	1	494023	○
			RAL 9016	1	1001494023	○
300	520	KS2 300 S12 230V R	E6/C-0	1	494030	●
			RAL 9016	1	1001494030	○
		KS2 300 S12 230V R Z	E6/C-0	1	494033	○
			RAL 9016	1	1001494033	○
400	570	KS2 400 S12 230V R	E6/C-0	1	494040	●
			RAL 9016	1	1001494040	○
		KS2 400 S12 230V R Z	E6/C-0	1	494043	○
			RAL 9016	1	1001494043	○
500	685	KS2 500 S12 230V R	E6/C-0	1	494050	●
			RAL 9016	1	1001494050	○
		KS2 500 S12 230V R Z	E6/C-0	1	494053	○
			RAL 9016	1	1001494053	○
600	685	KS2 600 S12 230V R	E6/C-0	1	494060	●
			RAL 9016	1	1001494060	○
		KS2 600 S12 230V R Z	E6/C-0	1	494063	○
			RAL 9016	1	1001494063	○
800	765	KS2 800 S12 230V R	E6/C-0	1	494080	●
			RAL 9016	1	1001494080	○
		KS2 800 S12 230V R Z	E6/C-0	1	494083	○
			RAL 9016	1	1001494083	○

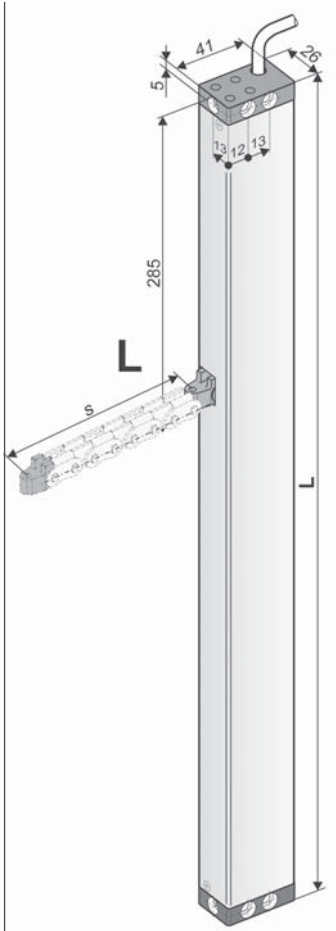
OPTIONS						
Special model		PU/pcs.	Part.-No.			
<b>Drive housing painted/powder coated in other RAL colours</b>					LZ	
Specify at order stage:		1 – 4	516004	○		
		5 – 9	516004			
		10 – 49	516004			
		50 – 99	516004			
		up 100	516004			
<b>Extra length connecting cable:</b>						
5 m – non-halogen, 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>						
Synchronised multi-drive set functions			495588	○		
Electronic stroke reduction			495590			
Special functions			524180			



- Application: natural ventilation
- Internal intelligent cut-off switch S12
- Parallel connection up to 8 drives in one group
- Z-Version: Programmable feedback limit position „OPEN“ and „CLOSE“ (max. 24 V, 500 mA)

**Options**

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



**TECHNICAL DATA**

$U_N$	Rated voltage	230V AC (50 Hz)
$I_N$	Rated current	0,13 A
$I_A$	Cut-off current	0,2 A
$P_N$	Rated power	30 W
ED	Duty cycle	30 % (ON: 3 min/OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +60 °C
$F_Z$	Pulling force max.	250 N
$F_A$	Pushing force	
		s > 600 mm only for pulling application
$F_H$	Pullout force	1.800 N (fastening depended)
	Chain	Stainless steel (1.4310)
	Connecting cable	non-halogen, grey 6 x 0,75 mm <sup>2</sup> , ~ 3 m
v	Speed	8,0 mm/s  8,0 mm/s
s	Stroke	200 – 800 mm (± 5 %)
L	Length	see order data

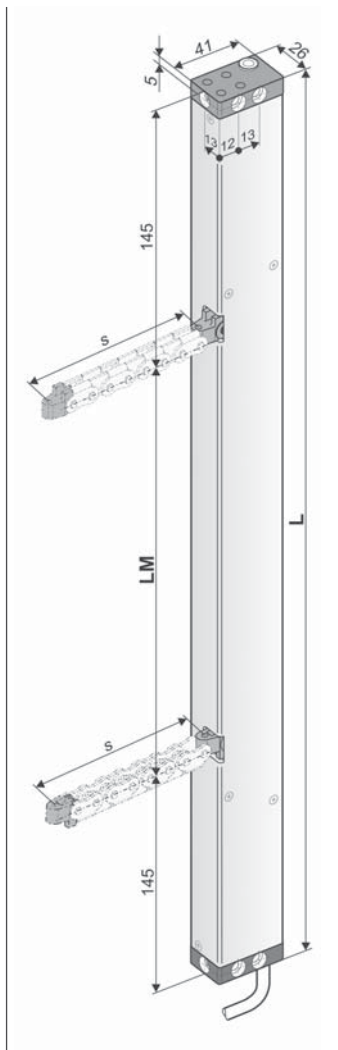
ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
						LZ
200	475	KS2 200 S12 230V L	E6/C-0	1	494120	●
			RAL 9016	1	1001494120	●
		KS2 200 S12 230V L Z	E6/C-0	1	494123	○
			RAL 9016	1	1001494123	○
300	520	KS2 300 S12 230V L	E6/C-0	1	494130	●
			RAL 9016	1	1001494130	●
		KS2 300 S12 230V L Z	E6/C-0	1	494133	○
			RAL 9016	1	1001494133	○
400	570	KS2 400 S12 230V L	E6/C-0	1	494140	●
			RAL 9016	1	1001494140	●
		KS2 400 S12 230V L Z	E6/C-0	1	494143	○
			RAL 9016	1	1001494143	○
500	685	KS2 500 S12 230V L	E6/C-0	1	494150	●
			RAL 9016	1	1001494150	●
		KS2 500 S12 230V L Z	E6/C-0	1	494153	○
			RAL 9016	1	1001494153	○
600	685	KS2 600 S12 230V L	E6/C-0	1	494160	●
			RAL 9016	1	1001494160	●
		KS2 600 S12 230V L Z	E6/C-0	1	494163	○
			RAL 9016	1	1001494163	○
800	765	KS2 800 S12 230V L	E6/C-0	1	494180	●
			RAL 9016	1	1001494180	●
		KS2 800 S12 230V L Z	E6/C-0	1	494183	○
			RAL 9016	1	1001494183	○

OPTIONS						
Special model		PU/pcs.	Part.-No.			
<b>Drive housing painted/powder coated in other RAL colours</b>					LZ	
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>						
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>						
Synchronised multi-drive set functions			495588	○		
Electronic stroke reduction			495590			
Special functions			524180			

- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Internal intelligent cut-off switch S12
- Z-Version: Programmable feedback limit position „OPEN“ and „CLOSE“ (max. 24 V, 500 mA)

### Options

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)



### TECHNICAL DATA

$U_N$	Rated voltage	24V DC ( $\pm 20\%$ ), max. 2 Vpp
$I_N$	Rated current	1,4 A
$I_A$	Cut-off current	2,0 A
$P_N$	Rated power	34 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.	500 N
$F_A$	Pushing force	
$F_H$	Pullout force	1.800 N (fastening depended)
	Chain	Stainless steel
	Connecting cable	non-halogen, grey 3 x 0,5 mm <sup>2</sup> , ~ 3 m Z-Version: 5 x 0,5 mm <sup>2</sup> ~ 3 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	200 – 600 mm ( $\pm 5\%$ )
L	Length	see order data
LM	Distance in between chains	see order data

ORDER DATA							
s [mm]	L [mm]	LM [mm]	Version	Finish	PU/pcs.	Part.-No.	
							LZ
200	640	350	KS2 TWIN 200 S12 24V	E6/C-0	1	<b>521820</b>	●
			KS2 TWIN 200 S12 24V Z	E6/C-0	1	<b>521823</b>	○
400	830	540	KS2 TWIN 400 S12 24V	E6/C-0	1	<b>521840</b>	●
			KS2 TWIN 400 S12 24V Z	E6/C-0	1	<b>521843</b>	○
500	1060	770	KS2 TWIN 500 S12 24V	E6/C-0	1	<b>521850</b>	●
			KS2 TWIN 500 S12 24V Z	E6/C-0	1	<b>521853</b>	○
600	1060	770	KS2 TWIN 600 S12 24V	E6/C-0	1	<b>521860</b>	●
			KS2 TWIN 600 S12 24V Z	E6/C-0	1	<b>521863</b>	○

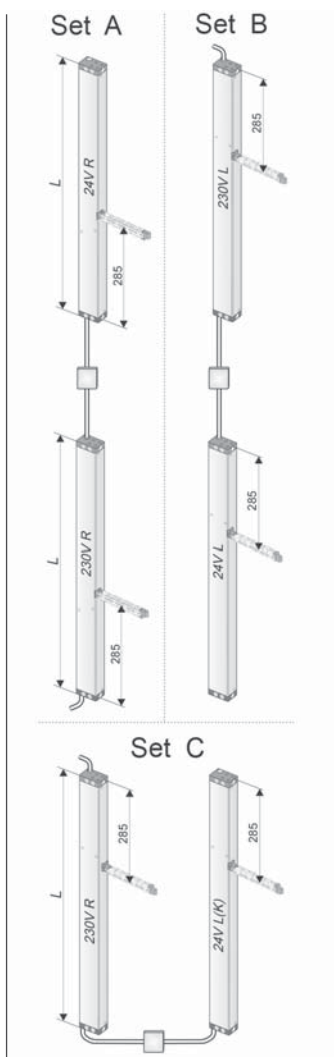
OPTIONS							
Special model		PU/pcs.	Part.-No.				
<b>Drive housing painted/powder coated in other RAL colours</b>						LZ	
Specify at order stage:		1 – 4	<b>516004</b>	○			
		5 – 9	<b>516004</b>				
		10 – 49	<b>516004</b>				
		50 – 99	<b>516004</b>				
		up 100	<b>516004</b>				
<b>Extra length connecting cable:</b>							
5 m – non-halogen, grey – 3 x 0,5 mm <sup>2</sup>			<b>501034</b>	○			
10 m – non-halogen, grey – grau 3 x 0,5 mm <sup>2</sup>			<b>501036</b>				
5 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>			<b>501054</b>	○			
10 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>			<b>501056</b>				
<b>Microprocessor programming S12</b>							
Electronic stroke reduction			<b>524190</b>	○			
Special functions			<b>524180</b>				
<b>Optional accessories</b>		PU/pcs.	Part.-No.				
M-COM Comm. module for synchronised multi-drive systems		1	<b>524177</b>	●			



- Application: natural ventilation
- Factory-configured set includes:
  - Master: KS2 xxx S12 230 V AC R / L with voltage output 24 V DC
  - Slave: KS2 xxx S12 24 V DC R / L with connection cable on the motor side
  - KS2 xxx S12 24 V DC L-K with connection cable on the chain side
- Sequence control with FV locking drives (S3/S12 SW V2)
- Parallel connection up to 8 sets of drives in one group
- Junction box to be site supplied

**Options:**

- Programmable special functions and sequence control with FV locking drives (S3/S12 SW V2)
- Screw terminal connections in drive housing upon request



### TECHNICAL DATA

$U_N$	Rated voltage	230V AC (50 Hz)
$I_N$	Rated current	0,15 A
$I_A$	Cut-off current	0,2 A
$P_N$	Rated power	35 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +60 °C
$F_Z$	Pulling force max.	2 x 250 N
$F_A$	Pushing force	<p><math>s &gt; 600</math> mm only for pulling application</p>
$F_H$	Pullout force	1.800 N (fastening depended)
	Chain	Stainless steel
	Connecting cable	Master: non-halogen, grey 6 x 0,75mm <sup>2</sup> , ~ 3 m 3 x 0,5 mm <sup>2</sup> , ~ 3 m Slave: non-halogen, grey 3 x 0,5 mm <sup>2</sup> , ~ 3 m
$v$	Speed	8,0 mm/s  8,0 mm/s
$s$	Stroke	200 – 800 mm (± 5 %)
$L$	Length	see order data

ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
						LZ
200	475	KS2 200 S12 230V Set A (R/R)	E6/C-0	1	494220	●
			RAL 9016	1	1001494220	●
		KS2 200 S12 230V Set B (L/L)	E6/C-0	1	494320	●
			RAL 9016	1	1001494320	●
		KS2 200 S12 230V Set C (R/L-K)	E6/C-0	1	494420	●
			RAL 9016	1	1001494420	●
300	520	KS2 300 S12 230V Set A (R/R)	E6/C-0	1	494230	●
			RAL 9016	1	1001494230	●
		KS2 300 S12 230V Set B (L/L)	E6/C-0	1	494330	●
			RAL 9016	1	1001494330	●
		KS2 300 S12 S 230V et C (R/L-K)	E6/C-0	1	494430	●
			RAL 9016	1	1001494430	●
400	570	KS2 400 S12 230V Set A (R/R)	E6/C-0	1	494240	●
			RAL 9016	1	1001494240	●
		KS2 400 S12 230V Set B (L/L)	E6/C-0	1	494340	●
			RAL 9016	1	1001494340	●
		KS2 400 S12 230V Set C (R/L-K)	E6/C-0	1	494440	●
			RAL 9016	1	1001494440	●
500	685	KS2 500 S12 230V Set A (R/R)	E6/C-0	1	494250	●
			RAL 9016	1	1001494250	●
		KS2 500 S12 230V Set B (L/L)	E6/C-0	1	494350	●
			RAL 9016	1	1001494350	●
		KS2 500 S12 230V Set C (R/L-K)	E6/C-0	1	494450	●
			RAL 9016	1	1001494450	●
600	685	KS2 600 S12 230V Set A (R/R)	E6/C-0	1	494260	●
			RAL 9016	1	1001494260	●
		KS2 600 S12 230V Set B (L/L)	E6/C-0	1	494360	●
			RAL 9016	1	1001494360	●
		KS2 600 S12 230V Set C (R/L-K)	E6/C-0	1	494460	●
			RAL 9016	1	1001494460	●
800	765	KS2 800 S12 230V Set A (R/R)	E6/C-0	1	494280	●
			RAL 9016	1	1001494280	●
		KS2 800 S12 230V Set B (L/L)	E6/C-0	1	494380	●
			RAL 9016	1	1001494380	●
		KS2 800 S12 230V Set C (R/L-K)	E6/C-0	1	494480	●
			RAL 9016	1	1001494480	●

OPTIONS						
Special model	PU/pcs.	Part.-No.				
<b>Drive housing painted/powder coated in other RAL colours</b>			LZ			
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>						
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				
5 m – non-halogen, grey – 3 x 0,5 mm <sup>2</sup>		501034				
10 m – non-halogen, grey – 3 x 0,5 mm <sup>2</sup>		501036				
<b>Microprocessor programming S12</b>						
Synchronised multi-drive set functions		495588	○			

OVERVIEW OF BRACKETS				1	2	3	4	5	6	
Typical application										
Frame bracket				K93, K94	K129, K130	K96, K96-1	No	K105A, K105B, K105S, K106	K128	
Casement bracket				F21, F35, F37, F17		F95, F120	F95, F120	F18, F19, F20, F22	F21	
Space requirement	min.	[mm]	16 – 30	25 – 30	38	30	Note profile depth	Schüco AWS 57RO		
Overlap thickness *1		[mm]	0 – 21	0 – 21	0 – 21	0 – 21				
Opening angle *2	max.	[DEG]	35	45	60	40	60	45		
Casement weight *3	max.	[Kg]	70	60	50	70	70	70		
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]	600 – 1200							
	Sync2	[mm]	1000 – 2500							
FAH *4	Solo	[mm]	250 – 1500							
	Sync2	[mm]	250 – 2500							

### LEGEND

● suitable ■ not recommended

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

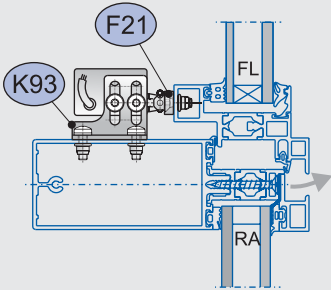
\*2 Sample values of the opening angle evaluated on the basis of FAB/FAH for inward opening windows with drives mounted at the main closing edge. For any other window heights, for outward opening windows and for windows with drives mounted at the side edges the opening angle will vary.

\*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.

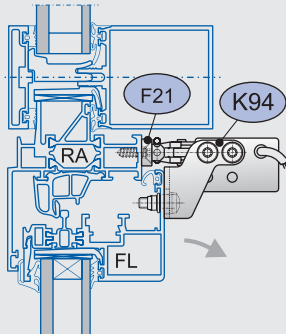
TYPICAL APPLICATIONS

1 PR, top hung outward opening



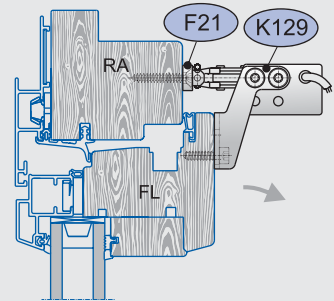
View on aluminium window

1 FM, bottom hung inward opening



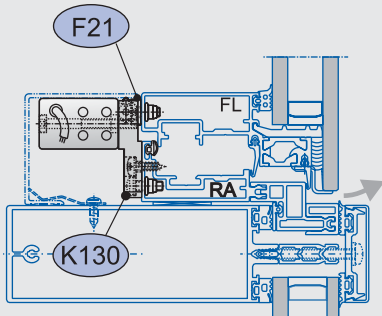
View on aluminium window

2 FM, bottom hung inward opening



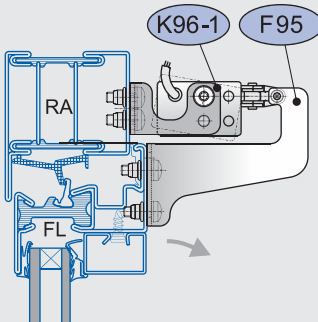
View on aluminium-wood window

2 RM, bottom hung outward opening



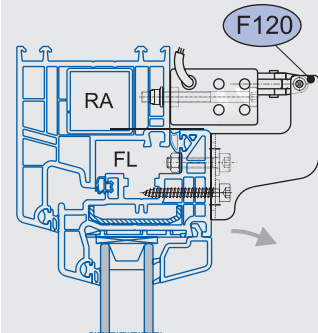
View on aluminium window

3 RM, bottom hung inward opening



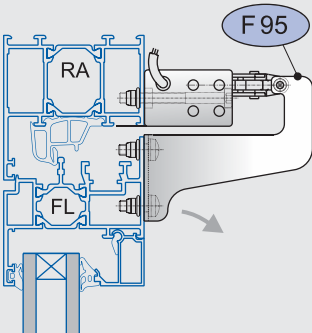
View on steel window

4 RM, bottom hung inward opening



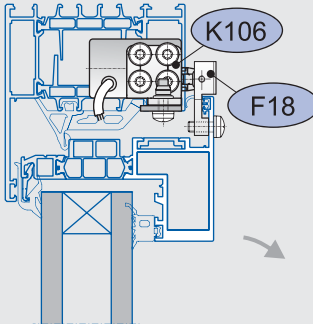
View on PVC window

4 RM, bottom hung inward opening



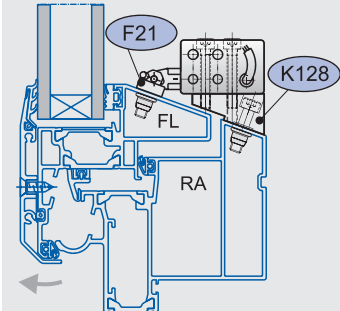
View on aluminium window

5 Concealed, bottom hung inward opening



View on aluminium window

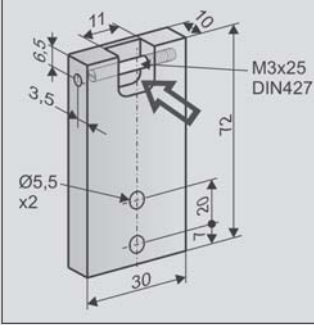
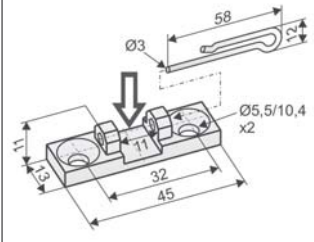
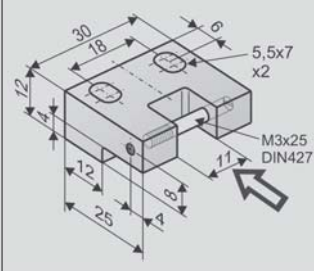
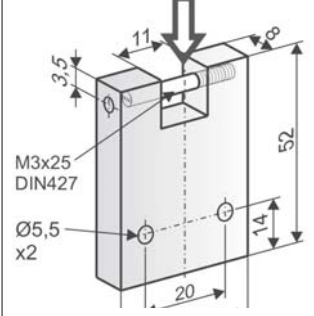
6 RM, top hung outward opening



View on aluminium window (Facade)

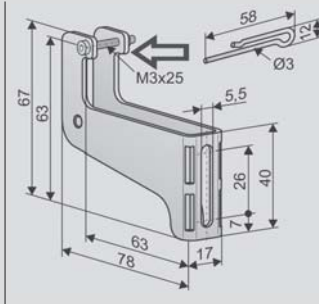


## CASEMENT BRACKETS

<b>F20</b>		<p><b>Application</b>  <b>Surface mounting</b> on inward opening face-fitted casements, for inside the window frame profiles concealed mounted drives <b>KS2</b> with <b>K105</b></p> <p>Chain fixing in direction of the arrow</p>	<p><b>Part.-No. 151420</b>  <b>Material/Finish</b>  aluminium  (natural anodized)  <b>Feature/Equipment</b>  1x shaft screw M3x25,  2x rounded head screw M5x10</p>	LZ ●	
<b>F21</b>		<p><b>Application</b>  <b>Surface mounting</b> on the casement/window frame profiles on the main/side closing edge of in-/outward opening windows, for surface mounted drives <b>KS2/KSL</b> with <b>K93, K94, K129, K130</b></p> <p>Chain fixing in direction of the arrow</p>	<p><b>Part.-No. 151421</b>  <b>Material/Finish</b>  aluminium  (natural anodized)  <b>Feature/Equipment</b>  1x spring pin Ø 3 mm</p>	●	
		<b>Optional accessories</b>			
<b>B1</b> for skylight Eternit		<b>Part.-No. 151422</b>	●		
<b>K128</b> for Schüco AWS 57RO		<b>Part.-No. 523974</b>	●		
<b>F35</b>		<p><b>Application</b>  <b>Surface mounting</b> on the horizontal side of deep casement profiles of outward opening (friction hinged) windows, for surface mounted drives <b>KS2/KSL</b> with <b>K93, K94, K129, K130</b></p> <p>Chain fixing in direction of the arrow</p>	<p><b>Part.-No. 151425</b>  <b>Material/Finish</b>  aluminium  (natural anodized)  <b>Feature/Equipment</b>  1x shaft screw M3x25</p>	●	
<b>F37</b>		<p><b>Application</b>  <b>Surface mounting</b> on the horizontal side of deep casement profiles of outward opening (friction hinged) windows, for surface mounted drives <b>KS2/KSL</b> with <b>K93, K94, K129, K130</b></p> <p>Chain fixing in direction of the arrow</p>	<p><b>Part.-No. 151424</b>  <b>Material/Finish</b>  aluminium  (natural anodized)  <b>Feature/Equipment</b>  1x shaft screw M3x25</p>	●	

### CASEMENT BRACKETS

F95



**Application**

**Surface mounting** on the case-ment profiles of inward opening windows, for surface mounted drives **KS2/KSL** with **K96-1**

Chain fixing in direction of the arrow

**Part.-No. 523972**

**Material/Finish**

Stainless steel

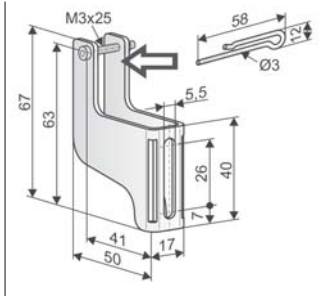
**Feature/Equipment**

1x screw M3x25,  
spring pin M3,  
1x spring pin (alternativ)

LZ



F120



**Application**

**Surface mounting** on the case-ment profiles of inward opening windows, for direct fixing of sur- face mounted drives **KS2** on the window frame profile

Chain fixing in direction of the arrow

**Part.-No. 523973**

**Material/Finish**

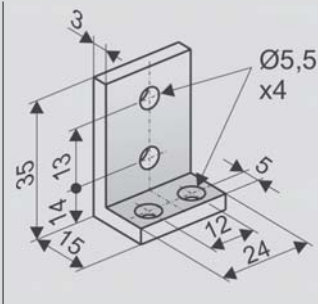
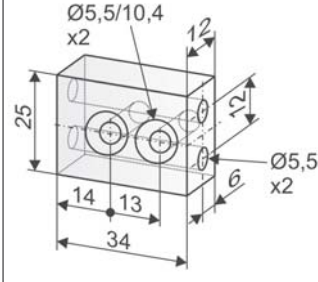
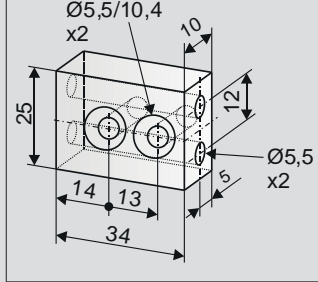
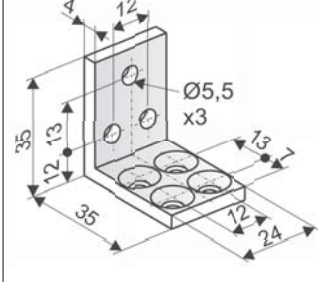
Stainless steel

**Feature/Equipment**

1x screw M3x25,  
spring pin M3,  
1x spring pin (alternativ)

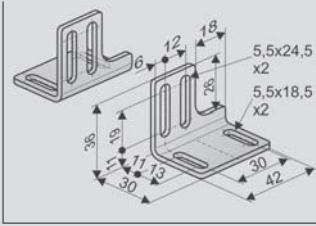


## CASEMENT BRACKETS

K105-B		<p><b>Application</b>  <b>Concealed mounting</b> inside the window frame profiles of in-/outward opening windows, for rigid fixing of concealed drives <b>KS2</b> with <b>F17, F18, F19, F20</b></p>	<p><b>Part.-No. 523977</b>  <b>Material/Finish</b>  aluminium (natural anodized)  <b>Feature/Equipment</b>  2 angle brackets, 4x rounded head screw M5x10, 4x washer A 5,3</p>	LZ	○		
K105-A		<p><b>Application</b>  <b>Concealed mounting</b> inside the window frame profiles of in-/outward opening windows, for rigid fixing of concealed drives <b>KS2</b> with casement brackets <b>F17</b>, (FAH min. 700 mm)</p>	<p><b>Part.-No. 523975</b>  <b>Material/Finish</b>  aluminium (natural anodized)  <b>Feature/Equipment</b>  2 angle brackets</p>	○			
K105-A-W77		<p><b>Application</b>  <b>Concealed mounting</b> inside the window frame profiles of in-/outward opening windows, for rigid fixing of concealed drives <b>KS2</b> with casement brackets <b>F18-1</b>, (FAH min. 400 mm)</p>	<p><b>Part.-No. 523965</b>  <b>Material/Finish</b>  aluminium (natural anodized)  <b>Feature/Equipment</b>  2 angle brackets</p>	○			
K106		<p><b>Application</b>  <b>Concealed mounting</b> inside the window frame profiles of in-/outward opening windows, for rigid fixing of concealed drives <b>KS2</b> with <b>F19</b> (FAH min. 700 mm), <b>F20</b> (FAH min 500 mm)</p>	<p><b>Part.-No. 523976</b>  <b>Material/Finish</b>  aluminium (natural anodized)  <b>Feature/Equipment</b>  2 angle brackets, 4x countersunk screw M5x10</p>	○			

### CASEMENT BRACKETS

**K93**



**Application**

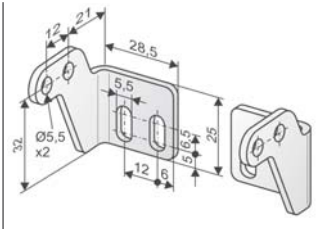
**Surface mounting** on the transom/mullion profiles of outward opening windows, for rigid fixing of surface mounted drives **KS2** with **F21**

**Part.-No. 523916**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
4x allen screw M5x10,  
4x washer A 5,3

LZ

**K94**



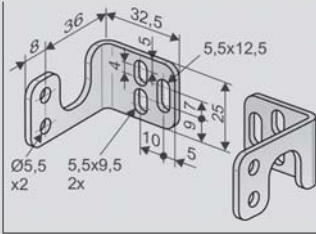
**Application**

**Surface mounting** on the casement/window frame profiles of in-/outward opening windows, for rigid or swivelling fixing of drives **KS2/KSL** with **F21, F35, F37**

**Part.-No. 523921**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
4x torx screw M5x10,  
4x washer A 5,3

**K96-1**



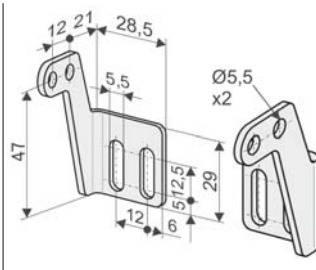
**Application**

**Surface mounting** on the casement profiles of inward opening windows, for rigid or swivelling fixing of drives **KS2/KSL** with **F95**

**Part.-No. 523997**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
4x torx screw M5x10,  
2x torx screw M5x16,  
4x washer A 5,3

**K129**



**Application**

**Surface mounting** on the casement/window frame profiles of in-/outward opening windows, for rigid or swivelling fixing of drives **KS2/KSL** with **F21, F35, F37**

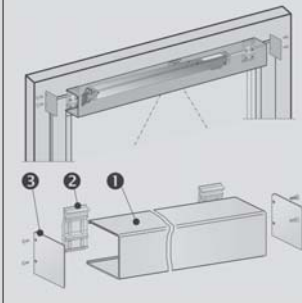
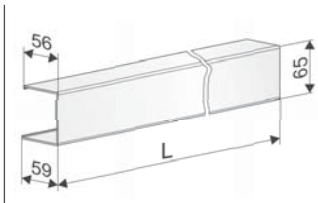
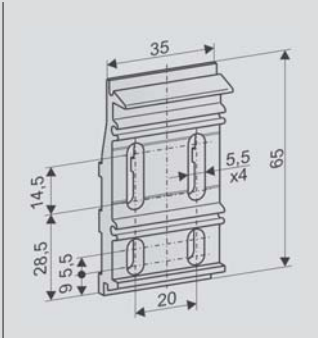
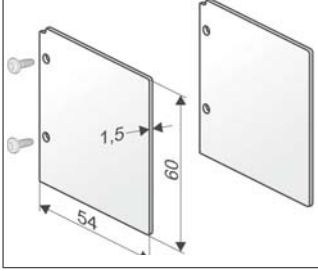
**Part.-No. 523969**

**Material/Finish**  
Stainless steel  
**Feature/Equipment**  
4x torx screw M5x10,  
4x washer A 5,3

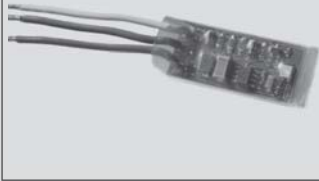


### OPTIONAL ACCESSORIES

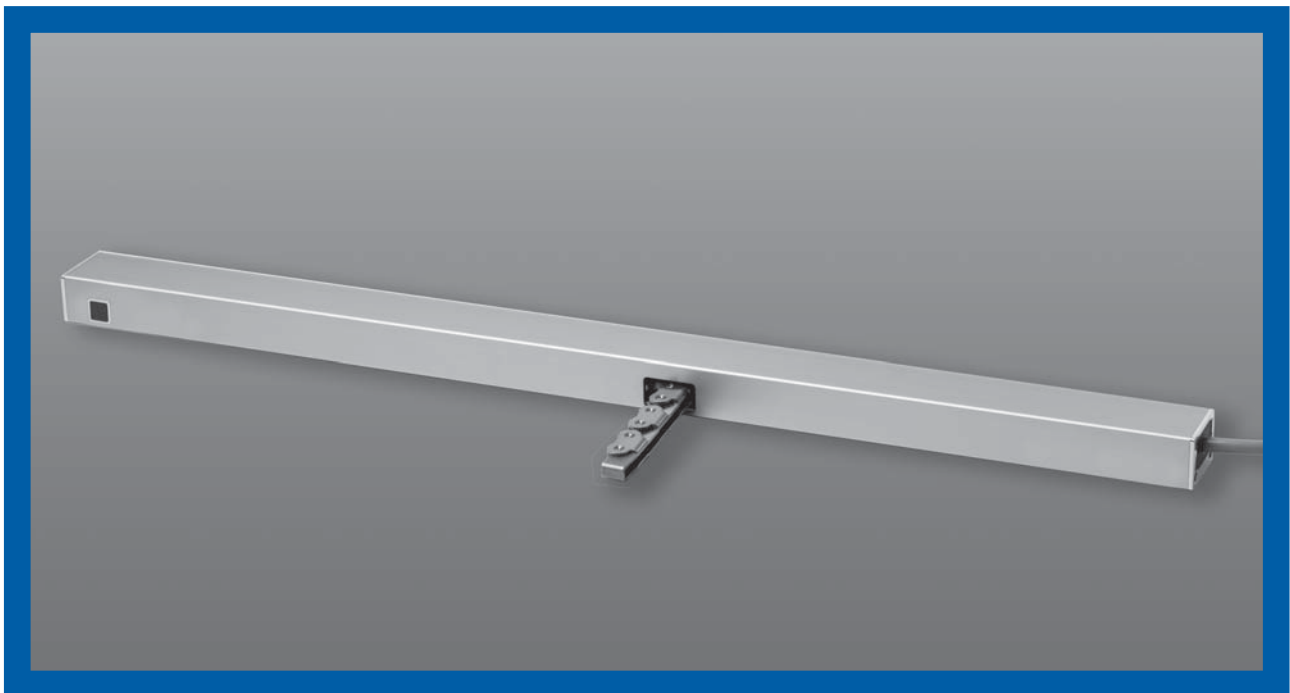
Chain drives

			LZ		
<b>Cover profile set</b>					
<b>AP KS2</b> 	<b>Application</b> <b>Cover profile</b> for surface mounted drives <b>KS2</b> with brackets <b>K94, K129, K130</b> . Profile length adjustable to the length of the drives (end caps recommended) or of the casement (without end caps)	<b>Material/Finish</b> see detailed description of componets <b>Feature/Equipment</b> incl. profile brackets, <b>without</b> end caps			
	<b>L = 1,5 m</b> (incl. 2x profile bracket)	<b>Part.-No. 523952</b>	○		
	<b>L = 2,0 m</b> (incl. 3x profile bracket)	<b>Part.-No. 523954</b>	○		
	<b>L = 2,9 m</b> (incl. 4x profile bracket)	<b>Part.-No. 523956</b>	○		
<b>Cover profile</b>					
	<b>1</b> <b>Cover profile</b> for drives <b>KS2</b> for cutting on site  Price per metre	<b>Part.-No. 523951</b> <b>Material/Finish</b> aluminium (natural anodized) <b>Feature/Equipment</b> <b>without</b> profile brackets and end caps	○		
<b>Profile bracket</b>					
	<b>2</b> <b>Profile bracket</b> for <b>KS2</b> cover profile < 2 m length: <b>2 pieces</b> > 2 m length: <b>3 – 4 pieces</b>	<b>Part.-No. 523948</b> <b>Material/Finish</b> aluminium (natural anodized) <b>Feature/Equipment</b> 1 piece (for fixing the cover profile)	○		
<b>End caps</b>					
	<b>3</b> <b>End caps</b> for <b>KS2</b> cover profile	<b>Part.-No. 523950</b> <b>Material/Finish</b> aluminium (natural anodized) <b>Feature/Equipment</b> 2 pieces + 4x screw M3x12 (taptite)	○		

## OPTIONAL ACCESSORIES

			LZ		
<b>Main control unit</b>					
<b>M-COM</b>		<p><b>Application</b>  <b>Communication module</b> for automatic configuration and surveillance of max. 6 opening or locking drives version S12/S3 (software version SW-V2) in synchronised multi-drive systems</p> <p><b>Rated voltage:</b>            24 V DC +/- 20%, (max. 2 Vss)</p> <p><b>Current consumption:</b> &lt;12 mA</p> <p><b>Drive type:</b> S12</p>	<p><b>Part.-No. 524177</b></p> <p><b>Protection rating</b>            IP30 rubber envelope</p> <p><b>Ambient temperature range</b>            0 °C ... + 70 °C</p> <p><b>Dimensions</b>            45 x 17 x 6 mm</p> <p><b>Connecting wires</b>            3 wires 0,5 mm<sup>2</sup> x 50 mm</p> <p><b>Feature/Equipment</b>            Printed circuit board with components and connection wires to be installed in connection box to be supplied on site</p>	●	

Special model	PU/pcs.	Part.-No.			
<b>Casement brackets painted / powder coated in other RAL colours</b>			LZ		
Specify at order stage:	1 – 4	<b>516026</b>	○		
	5 – 9	<b>516026</b>			
	10 – 49	<b>516026</b>			
	50 – 99	<b>516026</b>			
	up 100	<b>516026</b>			
<b>Frame brackets painted / powder coated in other RAL colours</b>					
Specify at order stage:	1 – 4	<b>516025</b>	○		
	5 – 9	<b>516025</b>			
	10 – 49	<b>516025</b>			
	50 – 99	<b>516025</b>			
	up 100	<b>516025</b>			



#### PRODUCT FEATURES KS4

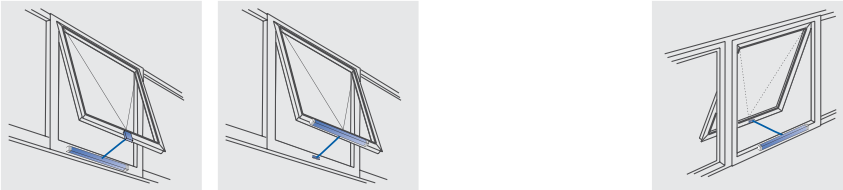
- For natural ventilation, smoke and heat exhausting systems and ferralux® NSHEV (EN12101-2)
- Aluminium housing anodized or RAL9016 finish, optional powder-coating according to RAL
- High-quality stainless steel sidebow roller chain, without protruding rivet heads
- Slim line body that suits concealed fitting within profiles
- Rigid drive mounting on frame without brackets
- Feedback limit position „CLOSE“ (max. 24 V, 500 mA)
- Programmable parameters of intelligent S12 electronic cut-off switch
  - Feedback limit position „OPEN“ (max. 24V, 500 mA)
  - 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

**FACADE**

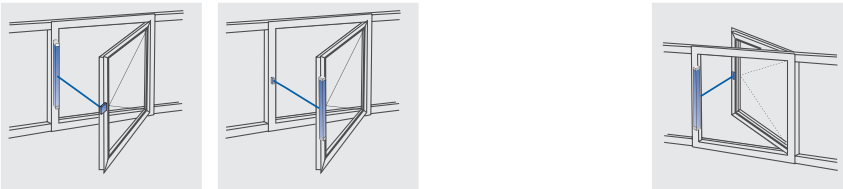
Bottom-hung



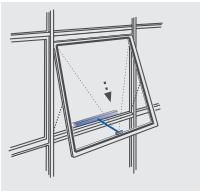
Top-hung



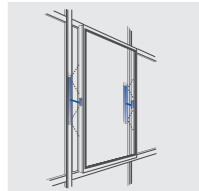
Side-hung



Friction hinged



Parallel outward opening



- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Internal intelligent cut-off switch S12
- Feedback limit position „CLOSE“ (max. 24 V, 500 mA)

**Equipment**

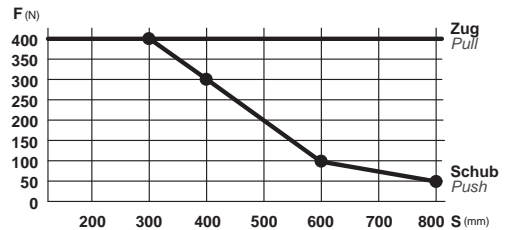
- Additional universal plug set for multi-drive operation

**Options**

- Programmable special functions
- Programmable feedback limit position „OPEN“ (max. 24V, 500 mA)
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)

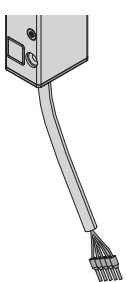
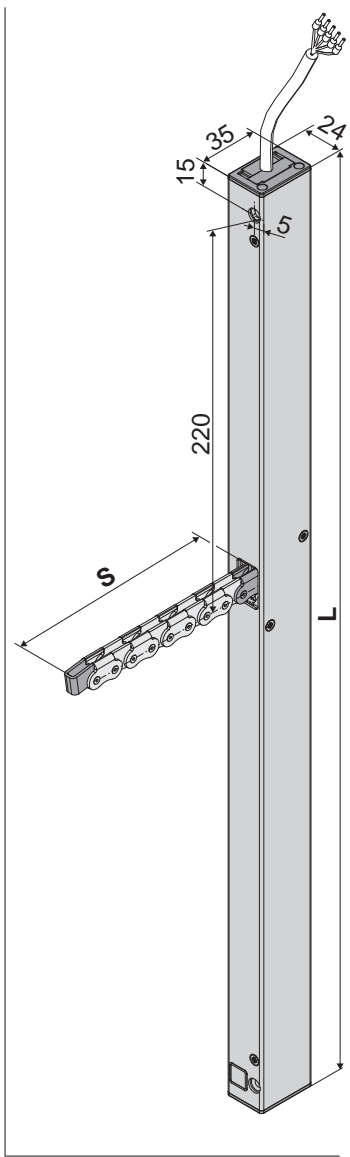
**TECHNICAL DATA**

$U_N$	Rated voltage	24V DC ( $\pm 20\%$ ), max. 2 Vpp
$I_N$	Rated current	0,9 A
$I_A$	Cut-off current	1,2 A
$P_N$	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
$F_Z$	Pulling force max.	400 N
$F_A$	Pushing force	



s > 600 mm only for pulling application

$F_H$	Pullout force	1.800 N (fastening depended)															
	Chain	Stainless steel, without protruding rivet heads. Simple connection to casement brackets. Small bending radii allow maximum opening angles of small windows.															
	Connecting cable	non-halogen, grey 5 x 0,5 mm <sup>2</sup> , ~ 2 m															
v	Speed	<table border="0"> <tr> <td>s &lt; 400</td> <td></td> <td>8,0 mm/s</td> <td></td> <td>8,0 mm/s</td> </tr> <tr> <td>s 500 – 600</td> <td></td> <td>12,0 mm/s</td> <td></td> <td>8,0 mm/s</td> </tr> <tr> <td>s &gt; 600</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	200 – 800 mm ( $\pm 5\%$ )															
L	Length	see order data															
	Feedback contact	limit position „CLOSE“ (max. 24 V, 500 mA)															
	Sound pressure level A	<<70 dB (A)															



AUMÜLLER chain drives have an integrated cable routing with connection sockets on both housing ends. This enables the following options:

- Universal plug with various cable lengths  
Part.-No.: 501250 - 1 m cable length / 501258 - 2 m cable length / 501251 - 3 m cable length / 501252 - 5 m cable length / 501253 - 10 m cable length
- Series connection of several drives into multi drive systems
- Power supply from both sides

ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
						LZ
200	455	KS4 200 S12 24V R	E6/C-0	1	522020	●
300	551	KS4 300 S12 24V R	E6/C-0	1	522030	●
400	551	KS4 400 S12 24V R	E6/C-0	1	522040	●
500	665	KS4 500 S12 24V R	E6/C-0	1	522050	●
600	665	KS4 600 S12 24V R	E6/C-0	1	522060	●
800	755	KS4 800 S12 24V R	E6/C-0	1	522080	●

OPTIONS						
Special model		PU/pcs.	Part.-No.			
<b>Drive housing painted/powder coated in other RAL colours</b>					LZ	
Specify at order stage:	1 – 4		516004	○		
	5 – 9		516004			
	10 – 49		516004			
	50 – 99		516004			
	up 100		516004			
<b>Microprocessor programming S12</b>						
Electronic stroke reduction			524190	○		
Special functions			524180	○		
Optional accessories		PU/pcs.	Part.-No.			
M-COM Comm. module for synchronised multi-drive systems		1	524177	●		

OVERVIEW OF BRACKETS								
Typical application			1	2	3			
Frame bracket			K134	K132	No			
Casement bracket			F41	F42	F42			
Space requirement	min.	[mm]	21	28	27			
Overlap thickness *1		[mm]	0 - 21	5 - 21	0 - 21			
Opening angle *2	max.	[DEG]	45	60	40			
Casement weight *3	max.	[Kg]	85	70	85			
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						
PR								
Roof		outward	HSK	RM	■	■		
	PR							
	NSK		RM					
		PR						
		PAF	outward	RM	●	●		
	Concealed							
FAB (*4)	Solo	[mm]	600 - 1200					
FAH (*4)	Solo	[mm]	250 - 1500					

### LEGEND

● suitable    ■ not recommended

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

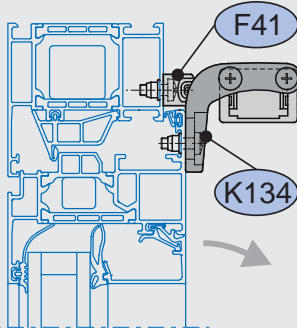
(\*2 Sample values of the opening angle evaluated on the basis of FAB/FAH for inward opening windows with drives mounted at the main closing edge. For any other window heights, for outward opening windows and for windows with drives mounted at the side edges the opening angle will vary.

(\*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.

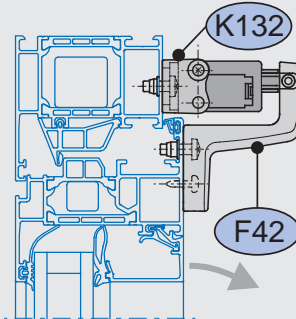
## TYPICAL APPLICATIONS

- 1 FM, bottom hung  
inward opening



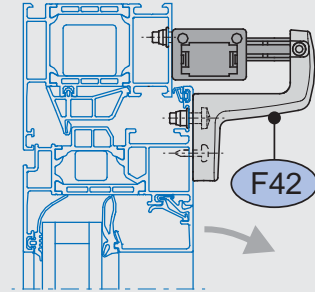
View on aluminium window

- 2 FM, bottom hung  
inward opening



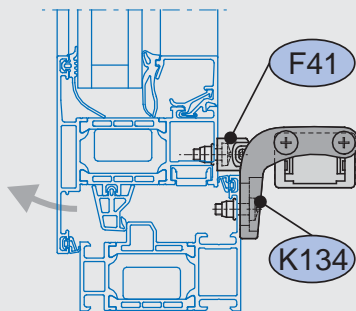
View on aluminium window

- 3 FM, bottom hung  
inward opening



View on aluminium window

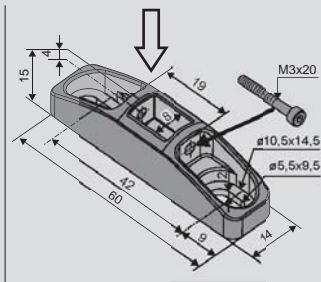
- 1 RM, top hung  
outward opening



View on aluminium window

### CASEMENT BRACKETS

F41



**Application**

**Surface mounting** on the case-ment/window frame profiles on the main/side closing edge of in-/outward opening windows, for surface mounted drives **KS4** with **K132, K134**

Chain fixing in direction of the arrow

**Part.-No. 151440**

**Material / Finish**

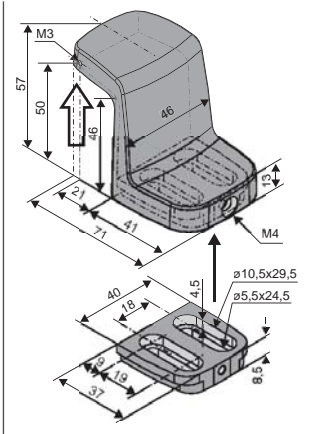
Cast aluminum, bright chrome

**Feature / Equipment**

1x cylinder head screw M3x20

LZ

F42



**Application**

**Surface mounting** on the case-ment profiles of inward opening windows, for surface mounted drives **KS4**

Chain fixing in direction of the arrow

**Part.-No. 151441**

**Material / Finish**

Cast aluminum, bright chrome

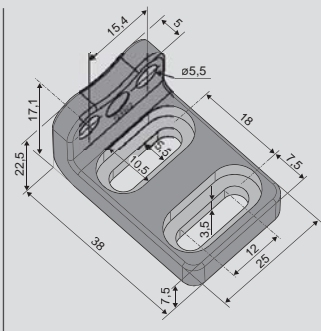
**Feature / Equipment**

1x baseplate  
1x countersunk screw M4x10  
1x cylinder head screw M3x25,

●

### FRAME BRACKETS

K132



**Application**

**Surface mounting** on the casement profiles of inward opening windows, for **swivelling** fixing of drives **KS4** with **F42**

**Part.-No. 522940**

**Material / Finish**

Cast aluminum, bright chrome

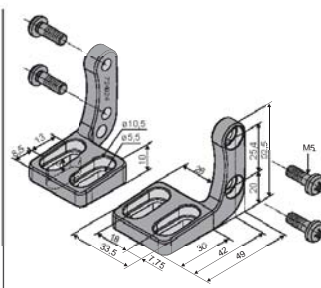
**Feature / Equipment**

2x frame brackets  
2x screws M5x16

LZ

●

K134



**Application**

**Surface mounting** on the case-ment/window frame profiles of in-/outward opening windows, for **rigid or swivelling** fixing of drives **KS4** with **F41, F42**

**Part.-No. 522941**

**Material / Finish**

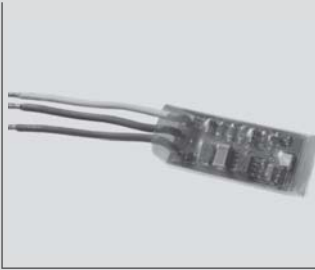
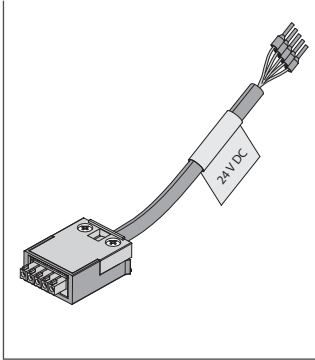
Cast aluminum, bright chrome

**Feature / Equipment**

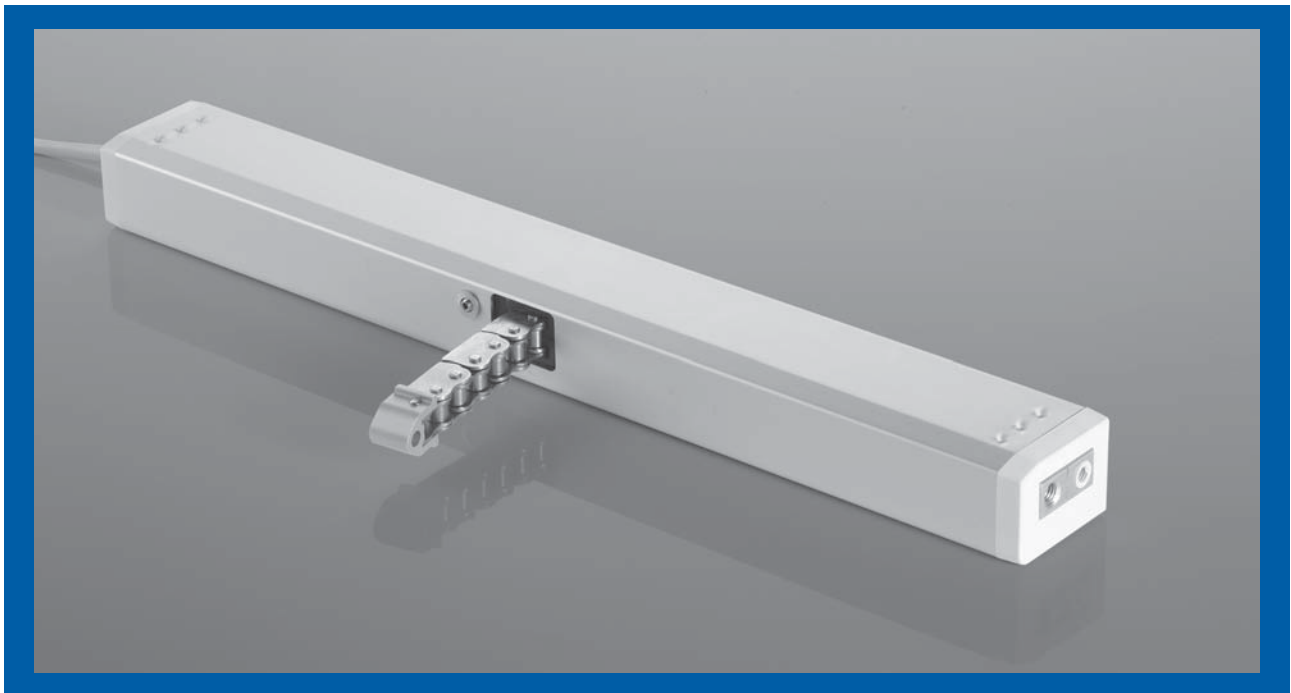
4x screw M5x10

●

## OPTIONAL ACCESSORIES

			LZ		
<b>Main control unit</b>					
<b>M-COM</b>		<p><b>Application</b>  <b>Communication module</b> for automatic configuration and surveillance of max. 6 opening or locking drives version S12/S3 (software version SW-V2) in synchronised multi-drive systems</p> <p><b>Rated voltage:</b>            24 V DC +/- 20 %, (max. 2 Vss)</p> <p><b>Current consumption:</b> &lt;12 mA</p> <p><b>Drive type:</b> S12</p>	<p><b>Part.-No. 524177</b></p> <p><b>Protection rating</b>            IP30 rubber envelope</p> <p><b>Ambient temperature range</b>            0 °C ... + 70 °C</p> <p><b>Dimensions</b>            45 x 17 x 6 mm</p> <p><b>Connecting wires</b>            3 wires 0,5 mm<sup>2</sup> x 50 mm</p> <p><b>Feature/Equipment</b>            Printed circuit board with components and connection wires to be installed in connection box to be supplied on site</p>	●	
<b>Plug</b>					
<b>Uni-versal plug</b>		<p><b>Application</b>  <b>Universal plug:</b>            Unitary plug-solution for all AUMÜLLER chain drives and AUMÜLLER folding arm drives.</p> <p><b>Rated voltage:</b>            24 V DC +/- 20 %, (max. 2 Vss)</p> <p><b>Connecting cable:</b>            non-halogen, grey 5 x 0,5 mm<sup>2</sup></p> <p><b>Terminal::</b>            to 1,5 mm<sup>2</sup> - 5 piece</p>	<p><b>Feature / Equipment</b></p> <ul style="list-style-type: none"> <li>• Flexible cable length</li> <li>• Connect multiple drives</li> <li>• Torsion-plug</li> <li>• Locking hooks prevent withdrawal of the plug under tensile load</li> <li>• Strain relief by screwing the housing halves according to DIN EN 60335-1</li> </ul>		
<b>VARIANTE:</b>					
	<b>1 m cable length - 24 V DC</b>	<b>Part.-No. 501250</b>	●		
	<b>2 m cable length - 24 V DC</b>	<b>Part.-No. 501258</b>	●		
	<b>3 m cable length - 24 V DC</b>	<b>Part.-No. 501251</b>	●		
	<b>5 m cable length - 24 V DC</b>	<b>Part.-No. 501252</b>	●		
	<b>10 m cable length - 24 V DC</b>	<b>Part.-No. 501253</b>	●		

Special model	PU/pcs.	Part.-No.			
<b>Casement brackets painted / powder coated in other RAL colours</b>			LZ		
Specify at order stage:	1 – 4	<b>516026</b>	○		
	5 – 9	<b>516026</b>			
	10 – 49	<b>516026</b>			
	50 – 99	<b>516026</b>			
	up 100	<b>516026</b>			
<b>Frame brackets painted / powder coated in other RAL colours</b>					
Specify at order stage:	1 – 4	<b>516025</b>	○		
	5 – 9	<b>516025</b>			
	10 – 49	<b>516025</b>			
	50 – 99	<b>516025</b>			
	up 100	<b>516025</b>			

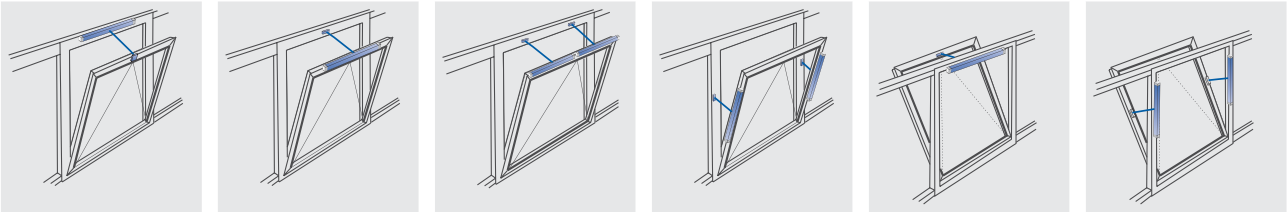


### PRODUCT FEATURES KSA

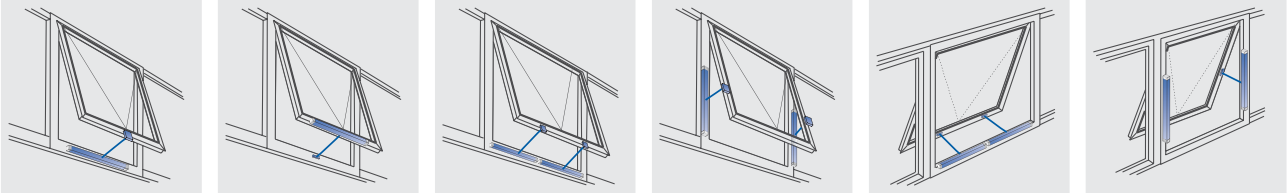
- For natural ventilation, smoke and heat exhausting systems and ferralux® NSHEV (EN12101-2)
- TWIN and D versions with two chains and doubled force
- Adjustable chain tension
- Mechanical chain unlocking
- Aluminium housing anodized or RAL9016 finish, optional powder-coating according to RAL
- High-quality stainless steel roller chain
- Programmable parameters of intelligent S12 electronic cut-off switch
  - 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

**FACADE**

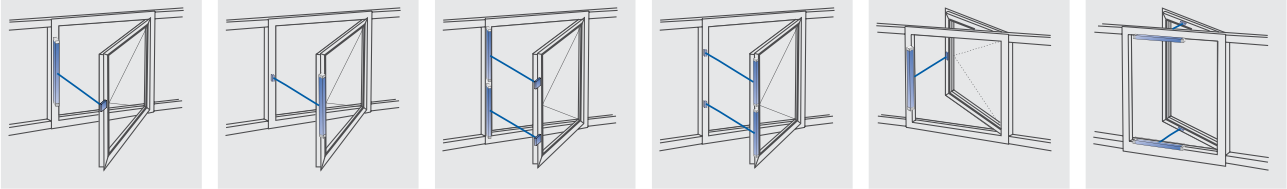
Bottom-hung



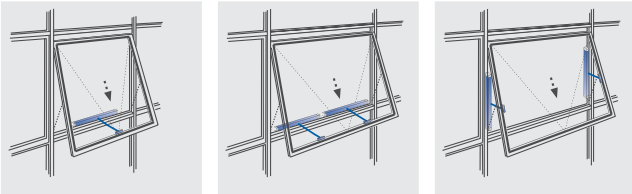
Top-hung



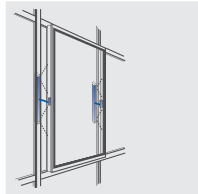
Side-hung



Friction hinged

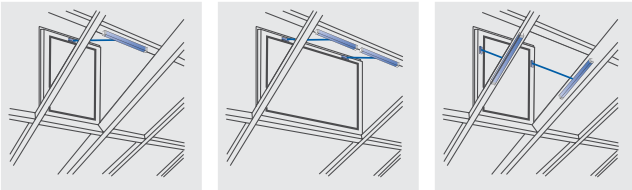


Parallel outward opening

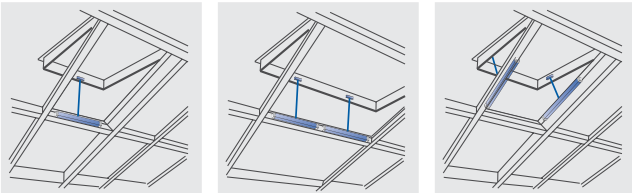


**ROOF**

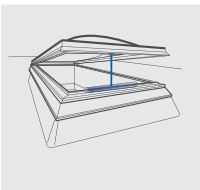
Bottom-hung



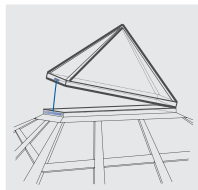
Top-hung



Sky light



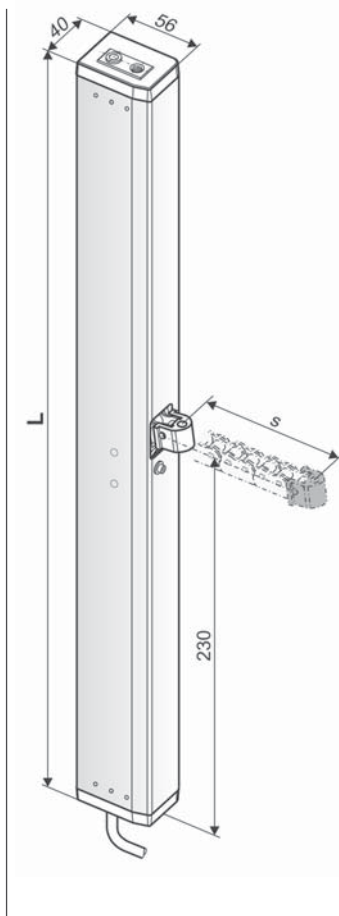
Glass pyramid



- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Internal intelligent cut-off switch 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 FV locking drives (S3/S12 SW V2)



### 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

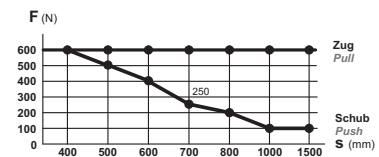
ED Duty cycle 30 % (ON: 3 min./OFF: 7 min.)

Protection rating IP 32

Ambient temperature range -5 °C ... +75 °C

$F_Z$  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- 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 > 600	13,5 mm/s	8,0 mm/s

S Stroke 250 – 1.500 mm ( $\pm 5\%$ )

L Length see order data

### Components packed with drive

1 2x Countersunk-head screw M8x16, 2x Spacer ring (brass)

2 Chain unlocking key

3 Dummy plug for unused cable entry

4 2x Dummy plugs for chain unlocking points

5 Warning label



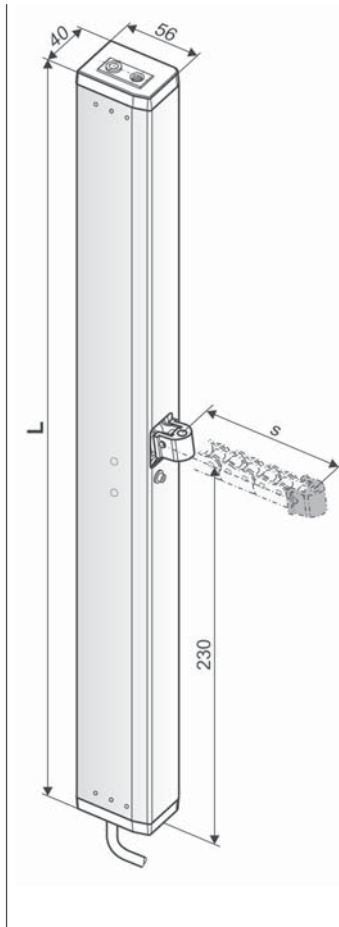
ORDER DATA							
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.		
						LZ	
250	461	KSA 250 S12 24V	E6/C-0	1	524825	●	
			RAL 9016	1	1001524825	○	
300	537	KSA 300 S12 24V	E6/C-0	1	524830	●	
			RAL 9016	1	1001524830	○	
400	537	KSA 400 S12 24V	E6/C-0	1	524840	●	
			RAL 9016	1	1001524840	○	
500	639	KSA 500 S12 24V	E6/C-0	1	524850	●	
			RAL 9016	1	1001524850	○	
600	639	KSA 600 S12 24V	E6/C-0	1	524860	●	
			RAL 9016	1	1001524860	○	
800	740	KSA 800 S12 24V	E6/C-0	1	524880	●	
			RAL 9016	1	1001524880	○	
1000	842	KSA 1000 S12 24V	E6/C-0	1	524810	○	
			RAL 9016	1	1001524810	○	
1200	944	KSA 1200 S12 24V	E6/C-0	1	524912	○	
			RAL 9016	1	1001524912	○	
1500	1097	KSA 1500 S12 24V	E6/C-0	1	524950	○	
			RAL 9016	1	1001524950	○	

OPTIONS							
Special model	PU/pcs.	Part.-No.					
<b>Drive housing painted/powder coated in other RAL colours</b>			LZ				
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		524190	○				
Special functions		524180					
<b>Mechanical chain shortening</b>							
in steps of 25 mm		524194	○				
OPTIONAL ACCESSORIES	PU/pcs.	Part.-No.					
M-COM Comm. module for synchronised multi-drive systems		524177	●				

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

### Options

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)



### 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

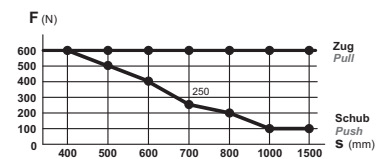
ED Duty cycle 30 % (ON: 3 min./OFF: 7 min.)

Protection rating IP 32

Ambient temperature range -5 °C ... +75 °C

F Pulling force max. 600 N

$F_A$  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- 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
$s > 600$	13,5 mm/s	8,0 mm/s

S Stroke 250 – 1.500 mm ( $\pm 5$  %)

L Length see order data

### Components packed with drive

- 1 2x Countersunk-head screw M8x16, 2x Spacer ring (brass)
- 2 Chain unlocking key
- 3 Dummy plug for unused cable entry
- 4 2x Dummy plugs for chain unlocking points
- 5 Warning label



ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
						LZ
250	461	KSA 250 S12 24V Z	E6/C-0	1	524823	●
			RAL 9016	1	1001524823	●
300	537	KSA 300 S12 24V Z	E6/C-0	1	524833	●
			RAL 9016	1	1001524833	●
400	537	KSA 400 S12 24V Z	E6/C-0	1	524843	●
			RAL 9016	1	1001524843	●
500	639	KSA 500 S12 24V Z	E6/C-0	1	524853	●
			RAL 9016	1	1001524853	●
600	639	KSA 600 S12 24V Z	E6/C-0	1	524863	●
			RAL 9016	1	1001524863	●
800	740	KSA 800 S12 24V Z	E6/C-0	1	524883	●
			RAL 9016	1	1001524883	●
1000	842	KSA 1000 S12 24V Z	E6/C-0	1	524813	●
			RAL 9016	1	1001524813	●
1200	944	KSA 1200 S12 24V Z	E6/C-0	1	524923	●
			RAL 9016	1	1001524923	●
1500	1097	KSA 1500 S12 24V Z	E6/C-0	1	524953	●
			RAL 9016	1	1001524953	●

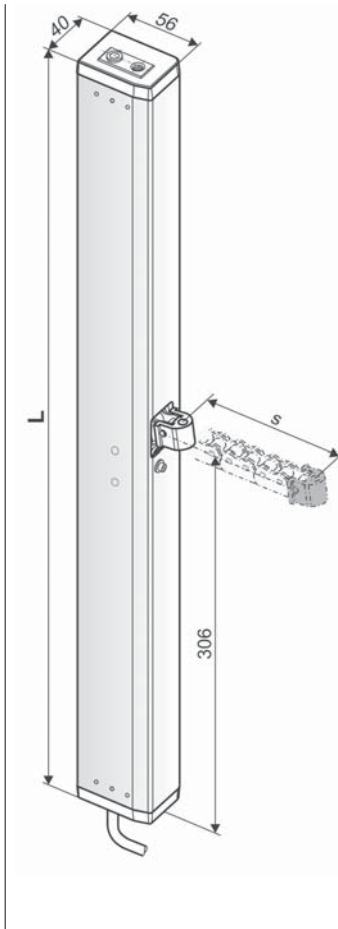
OPTIONS						
Special model	PU/pcs.	Part.-No.				
<b>Drive housing painted/powder coated in other RAL colours</b>			LZ			
Specify at order stage:	1 – 4	516004	○			
	5 – 9	516004				
	10 – 49	516004				
	50 – 99	516004				
	up 100	516004				
<b>Extra length connecting cable:</b>						
10 m – non-halogen, grey – 5 x 0,5 mm <sup>2</sup>		501056	○			
<b>Microprocessor programming S12</b>						
Electronic stroke reduction		524190	○			
Special functions		524180				
<b>Mechanical chain shortening</b>						
in steps of 25 mm		524194	○			
OPTIONAL ACCESSORIES	PU/pcs.	Part.-No.				
M-COM Comm. module for synchronised multi-drive systems		524177	●			



- Application: natural ventilation
- Internal intelligent cut-off switch S12
- Adjustable chain tension / Mechanical chain unlocking

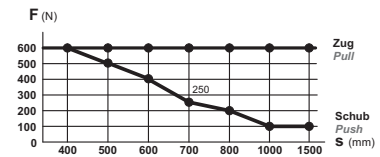
### Options

- Programmable special functions
- 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	= 8,0 mm/s  = 8,0 mm/s
s	Stroke	250 – 1.500 mm (± 5 %)
L	Length	see order data

### Components packed with drive

- 1 2x Countersunk-head screw M8x16, 2x Spacer ring (brass)
- 2 Chain unlocking key
- 3 Dummy plug for unused cable entry
- 4 2x Dummy plugs for chain unlocking points
- 5 Warning label

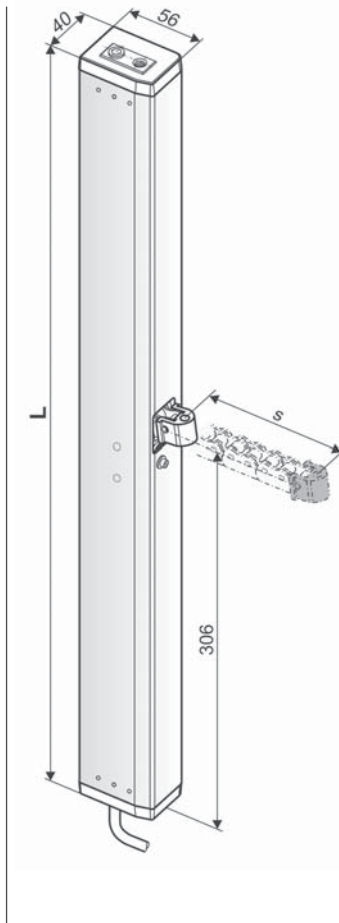


ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
						LZ
250	537	KSA 250 S12 230V	E6/C-0	1	495220	●
			RAL 9016	1	1001495220	○
300	613	KSA 300 S12 230V	E6/C-0	1	495230	●
			RAL 9016	1	1001495230	○
400	613	KSA 400 S12 230V	E6/C-0	1	495240	●
			RAL 9016	1	1001495240	○
500	715	KSA 500 S12 230V	E6/C-0	1	495250	●
			RAL 9016	1	1001495250	○
600	715	KSA 600 S12 230V	E6/C-0	1	495260	●
			RAL 9016	1	1001495260	○
800	816	KSA 800 S12 230V	E6/C-0	1	495280	●
			RAL 9016	1	1001495280	○
1000	918	KSA 1000 S12 230V	E6/C-0	1	495200	○
			RAL 9016	1	1001495200	○
1200	1020	KSA 1200 S12 230V	E6/C-0	1	495320	○
			RAL 9016	1	1001495320	○
1500	1173	KSA 1500 S12 230V	E6/C-0	1	495350	○
			RAL 9016	1	1001495350	○

OPTIONS						
Special model		PU/pcs.	Part.-No.			
<b>Drive housing painted/powder coated in other RAL colours</b>					LZ	
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>						
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>						
Synchronised multi-drive set functions			495588	○		
Electronic stroke reduction			495590			
Special functions			524180			

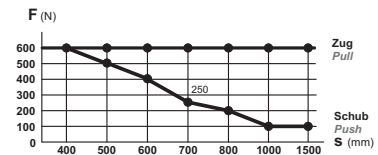


- Application: natural ventilation
- Internal intelligent cut-off switch S12
- Adjustable chain tension / Mechanical chain unlocking
- Programmable feedback limit position „OPEN“ and „CLOSE“ (max. 24 V, 500 mA)



### 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	8,0 mm/s  8,0 mm/s
$s$	Stroke	250 – 1.500 mm ( $\pm$ 5 %)
$L$	Length	see order data

### Components packed with drive

- 1 2x Countersunk-head screw M8x16, 2x Spacer ring (brass)
- 2 Chain unlocking key
- 3 Dummy plug for unused cable entry
- 4 2x Dummy plugs for chain unlocking points
- 5 Warning label



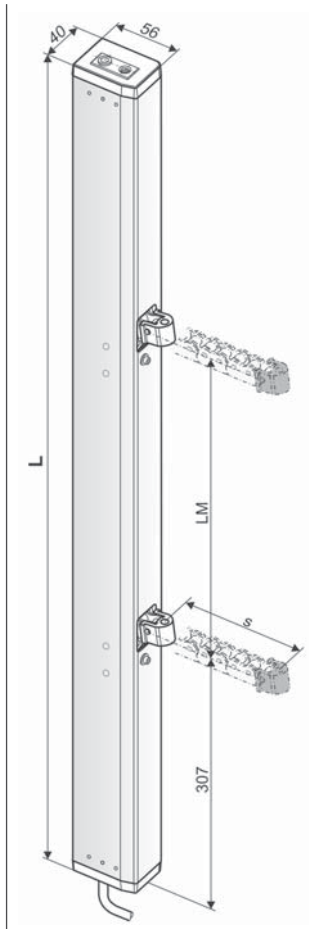
ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
						LZ
250	537	KSA 250 S12 230V Z	E6/C-0	1	<b>495223</b>	○
			RAL 9016	1	<b>1001495223</b>	○
300	613	KSA 300 S12 230V Z	E6/C-0	1	<b>495233</b>	○
			RAL 9016	1	<b>1001495233</b>	○
400	613	KSA 400 S12 230V Z	E6/C-0	1	<b>495243</b>	○
			RAL 9016	1	<b>1001495243</b>	○
500	715	KSA 500 S12 230V Z	E6/C-0	1	<b>495253</b>	○
			RAL 9016	1	<b>1001495253</b>	○
600	715	KSA 600 S12 230V Z	E6/C-0	1	<b>495263</b>	○
			RAL 9016	1	<b>1001495263</b>	○
800	816	KSA 800 S12 230V Z	E6/C-0	1	<b>495283</b>	○
			RAL 9016	1	<b>1001495283</b>	○
1000	918	KSA 1000 S12 230V Z	E6/C-0	1	<b>495203</b>	○
			RAL 9016	1	<b>1001495203</b>	○
1200	1020	KSA 1200 S12 230V Z	E6/C-0	1	<b>495323</b>	○
			RAL 9016	1	<b>1001495323</b>	○
1500	1173	KSA 1500 S12 230V Z	E6/C-0	1	<b>495353</b>	○
			RAL 9016	1	<b>1001495353</b>	○

OPTIONS						
Special model		PU/pcs.	Part.-No.			
<b>Drive housing painted/powder coated in other RAL colours</b>					LZ	
Specify at order stage:	1 – 4		<b>516004</b>	○		
	5 – 9		<b>516004</b>			
	10 – 49		<b>516004</b>			
	50 – 99		<b>516004</b>			
	up 100		<b>516004</b>			
<b>Extra length connecting cable:</b>						
5 m – non-halogen, grey – 6 x 0,75 mm <sup>2</sup>			<b>501164</b>	○		
10 m – non-halogen, grey – 6 x 0,75 mm <sup>2</sup>			<b>501166</b>			
<b>Microprocessor programming S12</b>						
Electronic stroke reduction			<b>495590</b>	○		
Special functions			<b>524180</b>			

- Application: natural ventilation, SHEV
- Internal intelligent cut-off switch 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 FV locking drives (S3/S12 SW V2)



### 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

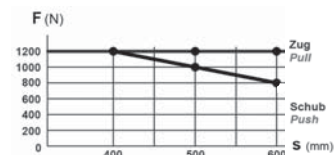
ED Duty cycle 30 % (ON: 3 min./OFF: 7 min.)

Protection rating IP 32

Ambient temperature range  $-5\text{ }^\circ\text{C} \dots +75\text{ }^\circ\text{C}$

$F_Z$  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 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

### Components packed with drive

1 2x Countersunk-head screw M8x16, 2x Spacer ring (brass)

2 2x Chain unlocking key

3 Dummy plug for unused cable entry

4 2x Dummy plugs for chain unlocking points

5 Warning label



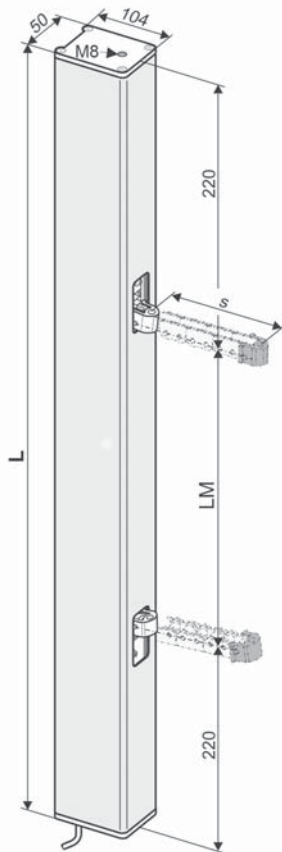
ORDER DATA							
s [mm]	L [mm]	LM [mm]	Version	Finish	PU/pcs.	Part.-No.	
							LZ
400	1100	485	KSA TWIN 400 S12 24V	E6/C-0	1	524845	●
500	1303	587	KSA TWIN 500 S12 24V	E6/C-0	1	524855	●
600	1303	587	KSA TWIN 600 S12 24V	E6/C-0	1	524865	●

OPTIONS							
Special model	PU/pcs.	Part.-No.					
<b>Drive housing painted/powder coated in other RAL colours</b>			LZ				
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		524190	○				
Special functions		524180					
<b>Mechanical chain shortening</b>							
In steps of 25 mm		524195	○				
<b>Optional accessories</b>		PU/pcs.	Part.-No.				
M-COM Comm. module for synchronised multi-drive systems		1	524177	●			

- Application: natural ventilation, SHEV
- Internal intelligent cut-off switch S12
- Adjustable chain tension

### Options

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)



### 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

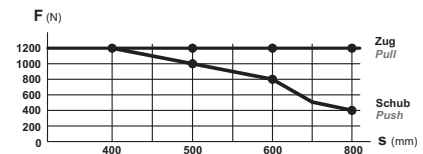
ED Duty cycle 30 % (ON: 3 min./OFF: 7 min.)

Protection rating IP 32

Ambient temperature range  $-5\text{ °C} \dots +75\text{ °C}$

$F_Z$  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

### 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.	
							LZ
400	737	297	KSA D 400 S12 24V	E6/C-0	1	<b>522140</b>	○
500	837	397	KSA D 500 S12 24V	E6/C-0	1	<b>522150</b>	○
600	837	397	KSA D 600 S12 24V	E6/C-0	1	<b>522160</b>	○
800	942	502	KSA D 800 S12 24V	E6/C-0	1	<b>522180</b>	○

OPTIONS							
Special model		PU/pcs.	Part.-No.				
<b>Drive housing painted/powder coated in other RAL colours</b>				LZ			
Specify at order stage:	1 – 4		<b>516004</b>	○			
	5 – 9		<b>516004</b>				
	10 – 49		<b>516004</b>				
	50 – 99		<b>516004</b>				
	up 100		<b>516004</b>				
<b>Extra length connecting cable:</b>							
10 m – non-halogen, grey– 5 x 0,5 mm <sup>2</sup>			<b>501056</b>	○			
<b>Microprocessor programming S12</b>							
Electronic stroke reduction			<b>524190</b>	○			
Special functions			<b>524180</b>				
<b>Mechanical chain shortening</b>							
In steps of 25 mm			<b>524194</b>	○			
<b>Optional accessories</b>		PU/pcs.	Part.-No.				
M-COM Comm. module for synchronised multi-drive systems		1	<b>524177</b>	●			

OVERVIEW OF BRACKETS							1	2	3	4	5	6		
Typical application														
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.

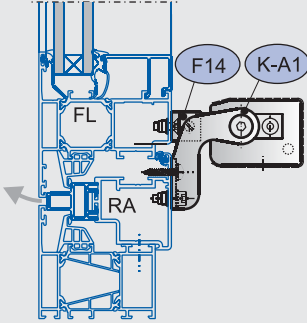
\*3 Please respect the individual geometry of the different windows. The listed max. casement weight refers to a single drive on button hung window with a max. opening angle.

\*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.

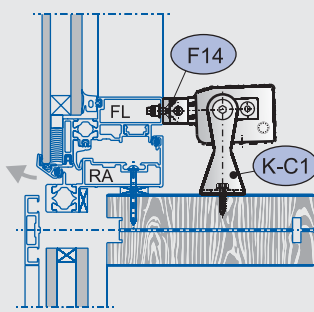
TYPICAL APPLICATIONS

1 RM, top hung outward opening



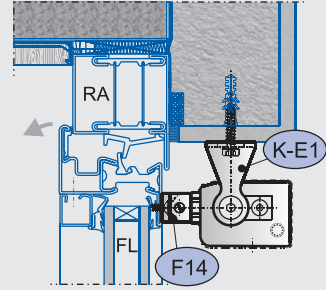
View on aluminium window

2 PR, bottom hung inward opening



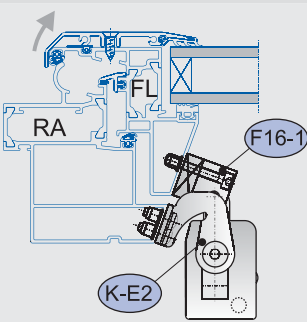
View on aluminium window

2 PR, bottom hung outward opening



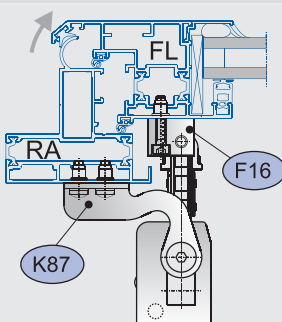
View on aluminium window

2 RM, roof



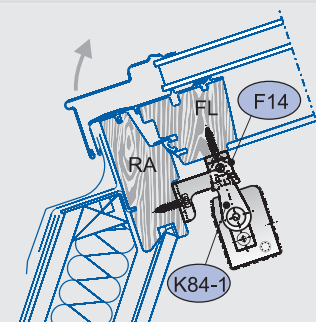
View on aluminium window

2 RM, roof



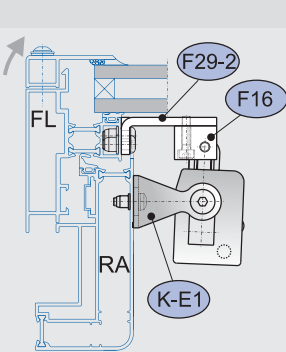
View on aluminium window

2 RM, roof



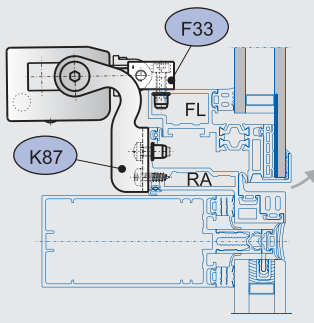
View on wooden window

2 RM, roof



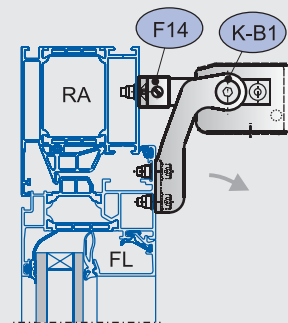
View on aluminium window

2 RM, top hung outward opening



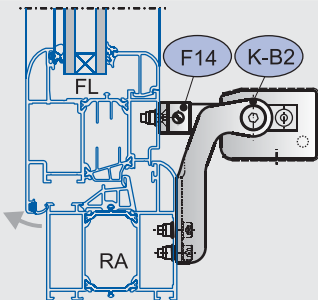
View on aluminium window

3 FM, bottom hung inward opening



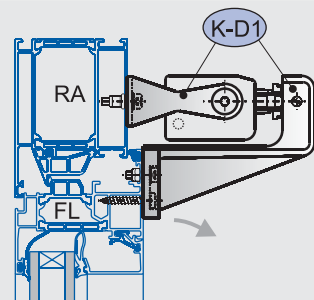
View on aluminium window

4 RM, top hung outward opening



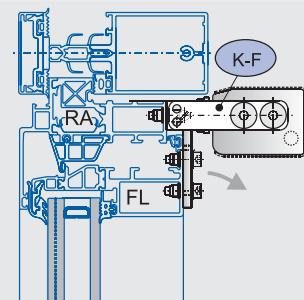
View on aluminium window

5 RM, bottom hung inward opening



View on aluminium window

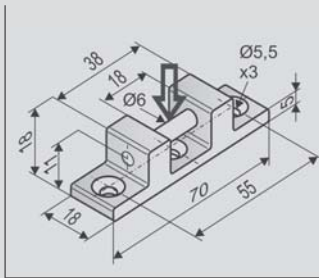
6 FM, bottom hung inward opening



View on aluminium window

### CASEMENT BRACKETS

F14



**Application**

**Surface mounting** on the casement/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**

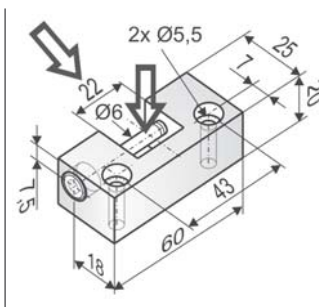
Chain fixing in direction of the arrow

**Part.-No. 524202**

**Material/Finish**  
 aluminium  
 (natural anodized)  
**Feature/Equipment**  
 1x grubscrew M6x35

LZ

F16



**Application**

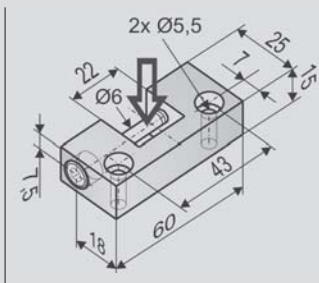
**Surface mounting** on the casement/window frame profiles of in-/outward opening windows (e.g. friction hinged or roof windows), for surface mounted drives  
**KSA** with  
**K-A1, K-B1, K-B2, K-E1, K-E2 K84-1, K87**

Chain fixing in direction of the arrow

**Part.-No. 524204**

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

F33



**Application**

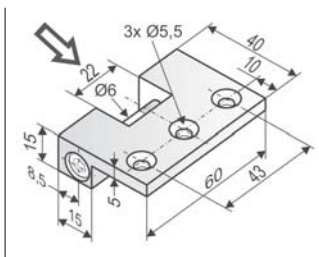
**Surface mounting** on the casement profile of outward opening windows (e.g. friction hinged or roof windows), for surface mounted drives  
**KSA** with  
**K-A1, K-B1, K-B2, K-E1, K84-1, K87**

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 casement profile of outward opening friction hinged windows, for surface mounted drives  
**KSA** with  
**K-A1, K-B1, K87**

Chain fixing in direction of the arrow

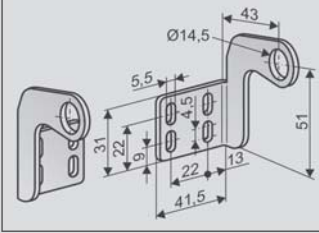
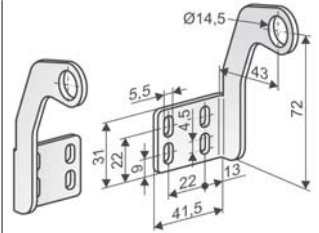
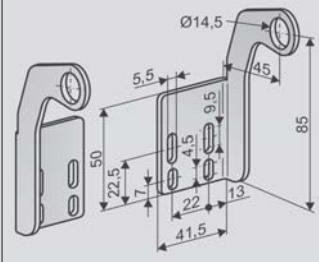
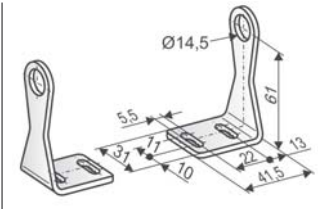
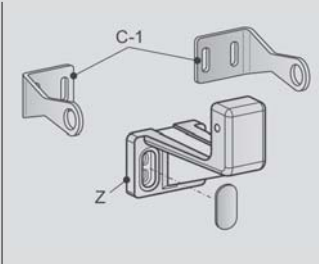
**Part.-No. 524199**

**Material/Finish**  
 aluminium  
 (natural anodized)  
**Feature/Equipment**  
 1x cylinder head screw M6x5

## CASEMENT BRACKETS

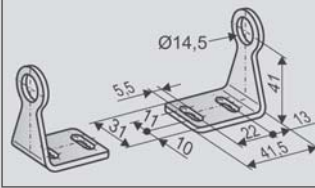
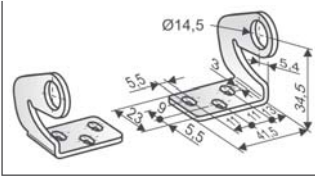
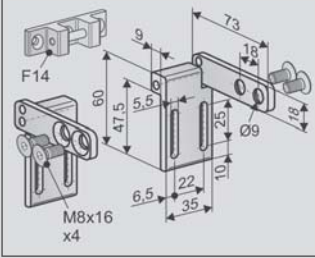
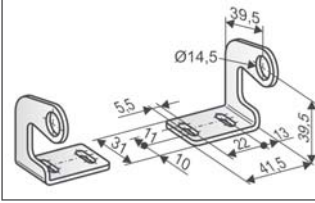
F39		<b>Application</b> <b>Surface mounting</b> on the caseiment profile of outward opening roof windows, for surface mounted drives <b>KSA</b> with <b>K-A1, K-B1, K-B2, K-E1, K84-1</b>  Chain fixing in direction of the arrow	<b>Part.-No. 524295</b>  <b>Material/Finish</b> aluminium (natural anodized)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

### FRAME BRACKETS

<p><b>K-A1</b></p> 	<p><b>Application</b>  <b>Surface mounting</b> on the case-ment/window frame profiles of in-/outward opening windows, for swivelly fixing of drives <b>KSA</b> with <b>F 4, F 6, F33, F39</b> (Required space on frame profile <b>35 mm</b>)</p>	<p><b>Part.-No. 524057</b>  <b>Material/Finish</b>                  Stainless steel  <b>Feature/Equipment</b>                  1x right,                  1x left</p>	<p>LZ</p>		
<p><b>K-B1</b></p> 	<p><b>Application</b>  <b>Surface mounting</b> on the case-ment/ window frame profiles of in-/outward opening windows, for swivelling fixing of drives <b>KSA</b> with <b>F14, F16, F33, F39</b> (Required space on frame profile <b>35 – 52 mm</b>)</p>	<p><b>Part.-No. 524053</b>  <b>Material/Finish</b>                  Stainless steel  <b>Feature/Equipment</b>                  1x right,                  1x left</p>			
<p><b>K-B2</b></p> 	<p><b>Application</b>  <b>Surface mounting</b> on the case-ment/ window frame profiles of in-/outward opening (wooden) windows, for swivelling fixing of drives <b>KSA</b> with <b>F14, F16, F33, F39</b> (Required space on frame profile <b>35 – 52 mm</b>)</p>	<p><b>Part.-No. 524063</b>  <b>Material/Finish</b>                  Stainless steel  <b>Feature/Equipment</b>                  1x right,                  1x left</p>			
<p><b>K-C1</b></p> 	<p><b>Application</b>  <b>Surface mounting</b> on the case-ment/window frame profiles or on the mullion/transom of outward opening windows, for swivelling fixing of drives <b>KSA</b> with <b>F14, F16, F33, F39</b></p>	<p><b>Part.-No. 524054</b>  <b>Material/Finish</b>                  Stainless steel  <b>Feature/Equipment</b>                  1x right,                  1x left</p>			
<p><b>K-D1</b></p> 	<p><b>Application</b>  <b>Surface mounting</b> on the case-ment and frame profile of inward opening windows, for swivelling fixing of drives <b>KSA</b> on the frame profile (required space <b>50 mm</b>)</p>	<p><b>Part.-No. 524055</b>  <b>Material/Finish</b>                  Stainless steel (C-1),                  Aluminum casting (Z)  <b>Feature/Equipment</b>                  1x C-1,                  1x Z</p>			
	<p><b>Accessories for</b></p>	<p><b>F73 Casement bracket „Z“</b></p>	<p><b>Part.-No. 524221</b></p>	<p>●</p>	

Chain drives

## FRAME BRACKETS

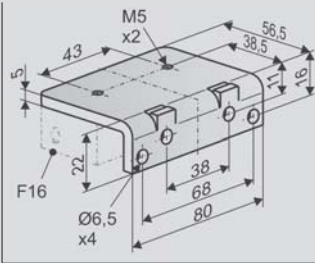
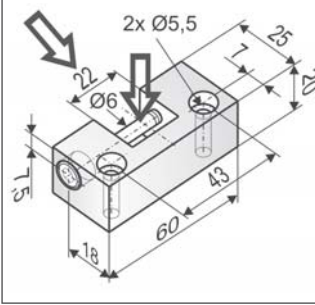
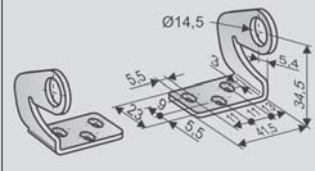
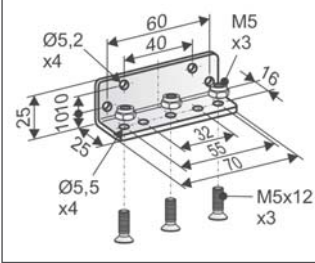
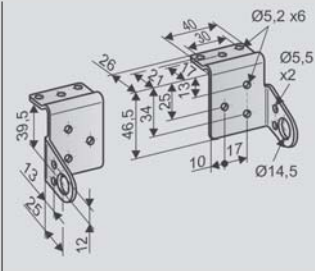
				LZ		
<b>K-E1</b>		<b>Application</b> <b>Surface mounting</b> on the mullion/transom of outward opening windows, for swiveling fixing of drives <b>KSA</b> with <b>F14, F16, F33, F39</b>	<b>Part.-No. 524056</b> <b>Material/Finish</b> Stainless steel <b>Feature/Equipment</b> 1x right, 1x left	●		
<b>K-E2</b>		<b>Application</b> <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>	<b>Part.-No. 524066</b> <b>Material/Finish</b> Stainless steel <b>Feature/Equipment</b> 1x right, 1x left	●		
<b>K-F</b>		<b>Application</b> <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> )	<b>Part.-No. 524211</b> <b>Material/Finish</b> aluminium (natural anodized) <b>Feature/Equipment</b> 4x countersunk-head screw M8x16 + 1x F14	●		
<b>K84-1</b>		<b>Application</b> <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>	<b>Part.-No. 524224</b> <b>Material/Finish</b> Stainless steel <b>Feature/Equipment</b> 1x right, 1x left	●		

### SPECIFIC APPLICATIONS

Chain drives

			LZ		
<b>ROOF WINDOWS   SCHÜCO AWS 57RO</b>					
<b>F16-1</b>		<p><b>Application</b>  <b>Surface mounting</b> on the window frame profiles of outward opening roof windows series <b>Schüco AWS 57RO</b>, for fixing of drives <b>KSA</b></p>	<p><b>Part.-No. 155171</b>  <b>Material/Finish</b>                      aluminium (natural anodized)  <b>Feature/Equipment</b>                      1x cylinder head screw M6x50 with base plate</p>	●	
<b>K-E2</b>		<p><b>Application</b>  <b>Surface mounting</b> 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></p>	<p><b>Part.-No. 524066</b>  <b>Material/Finish</b>                      Stainless steel  <b>Feature/Equipment</b>                      1x right, 1x left</p>	●	
<b>FRICION HINGED WINDOWS   SCHÜCO FW50</b>					
<b>K87</b>		<p><b>Application</b>  <b>Surface mounting</b> on the window frame profiles of outward opening friction hinged windows <b>Schüco FW50+</b>, for swivelling fixing of drives <b>KSA</b> (Required space on frame profile <b>35 mm</b>)</p>	<p><b>Part.-No. 524319</b>  <b>Material/Finish</b>                      Stainless steel  <b>Feature/Equipment</b>                      1x right, 1x left, incl. F33 + B3</p>	●	

## SPECIFIC APPLICATIONS

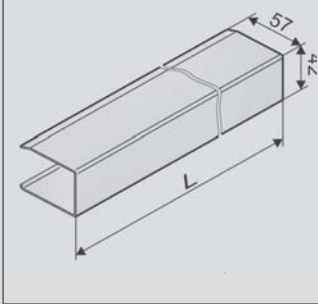
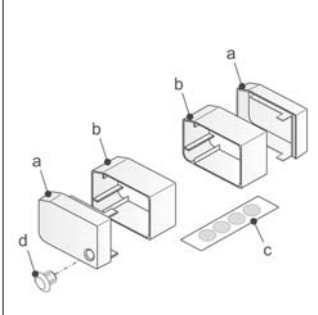
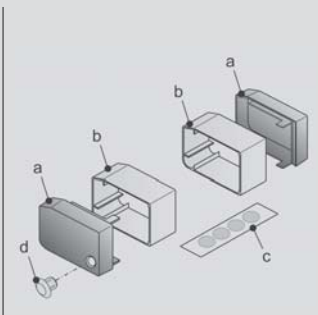
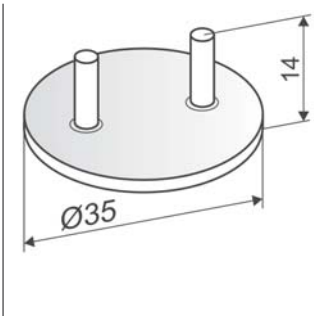
			LZ		
<b>ROOF WINDOWS   HEROAL 085 / 180</b>					
<b>F29-2</b>		<p><b>Application</b></p> <p><b>Surface mounting</b> on the window frame profiles of outward opening roof windows series <b>Heroal 085 / 180</b>, for fixing of drives <b>KSA</b> with <b>F16</b></p>	<p><b>Part.-No. 155157</b></p> <p><b>Material/Finish</b> Stainless steel</p> <p><b>Feature/Equipment</b> 2x cylinder head screw M6x20</p>	●	
<b>F16</b>		<p><b>Application</b></p> <p><b>Surface mounting</b> 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></p> <p>Chain fixing in direction of the arrow</p>	<p><b>Part.-No. 524204</b></p> <p><b>Material/Finish</b> aluminium (natural anodized)</p> <p><b>Feature/Equipment</b> 1x cylinder head screw M6x50</p>	●	
<b>K-E2</b>		<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 swivelling 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>	●	
<b>SKYLIGHT DOME</b>					
<b>B1</b>		<p><b>Application</b></p> <p><b>Mounting angle</b> for mounting of drives <b>KS2</b> with <b>F21</b> and <b>KSA</b> with <b>F14</b> on skylight domes</p>	<p><b>Part.-No. 151422</b></p> <p><b>Material/Finish</b> Stainless steel</p> <p><b>Feature/Equipment</b> 1x countersunk-head screw M5x12, 3x nut M5</p>	●	
<b>K125</b>		<p><b>Application</b></p> <p><b>Surface mounting</b> on the upstand of skylight domes for fixing of drives <b>KS2</b> and <b>KSA</b> with <b>B1</b></p>	<p><b>Part.-No. 523979</b></p> <p><b>Material/Finish</b> Stainless steel</p> <p><b>Feature/Equipment</b> 4x screw M5x10</p>	●	

### OPTIONAL ACCESSORIES

Chain drives

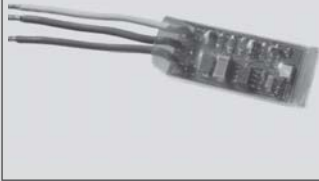
			LZ		
<b>Casement bracket „Z“</b>					
<b>F73</b>		<p><b>Application</b>  <b>Surface mounting</b> on the casement profiles of inward opening windows, for surface mounted drives <b>KSA</b> with <b>K-C1</b></p>	<p><b>Part.-No. 524221</b>  <b>Material/Finish</b>                      cast aluminium (RAL 9007)  <b>Feature/Equipment</b>                      1x grub screw M5x35                      2x cover plate, adhesive</p>	●	
<b>Base Plate F39/F40</b>					
<b>B2</b>		<p><b>Application</b>  <b>Support</b> for <b>F39</b> and <b>F40</b> as packing plate for mounting on the casement profiles of outward opening roof windows</p>	<p><b>Part.-No. 155173</b>  <b>Material/Finish</b>                      aluminium                      (natural anodized)  <b>Feature/Equipment</b>                      60 x 20 x 5 mm</p>	●	
<b>Base Plate K-F</b>					
<b>B3</b>		<p><b>Application</b>  <b>Support</b> for frame bracket set <b>K-F</b> as packing plate for mounting of drives <b>KS2</b> on the casement profiles with casement overlap thickness <b>FÜ &lt; 10 mm</b></p>	<p><b>Part.-No. 524222</b>  <b>Material/Finish</b>                      aluminium  <b>Feature/Equipment</b>                      for casement bracket F14                      2x t= 3 mm, 1x t= 5 mm,                      for frame brackets                      4x t = 5 mm</p>	●	

## OPTIONAL ACCESSORIES

			LZ		
<b>Cover-profile Set</b>					
<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>	●		
<b>Assembly-set for cover profile (grey and caps)</b>					
	<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	●			
<b>Assembly-set for cover profile (black and caps)</b>					
	<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	●			
<b>Chain unlocking key</b>					
	<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

Chain drives

			LZ	PG	
<b>Main control unit</b>					
<b>M-COM</b>		<p><b>Application</b>  <b>Communication module</b> for automatic configuration and surveillance of max. 6 opening or locking drives version S12/S3 (software version SW-V2) in synchronised multi-drive systems</p> <p><b>Rated voltage:</b>                  24 V DC +/- 20%, (max. 2 Vss)</p> <p><b>Current consumption:</b> &lt;12 mA</p> <p><b>Drive type:</b> S12</p>	<p><b>Part.-No. 524177</b></p> <p><b>Protection rating</b>                  IP30 rubber envelope</p> <p><b>Ambient temperature range</b>                  0 °C ... + 70 °C</p> <p><b>Dimensions</b>                  45 x 17 x 6 mm</p> <p><b>Connecting wires</b>                  3 wires 0,5 mm<sup>2</sup> x 50 mm</p> <p><b>Feature/Equipment</b>                  Printed circuit board with components and connection wires to be installed in connection box to be supplied on site</p>	●	

Special model	PU/pcs.	Part.-No.			
<b>Casement brackets painted / powder coated in other RAL colours</b>			LZ		
Specify at order stage:	1 – 4	<b>516026</b>	○		
	5 – 9	<b>516026</b>			
	10 – 49	<b>516026</b>			
	50 – 99	<b>516026</b>			
	up 100	<b>516026</b>			
<b>Frame brackets painted / powder coated in other RAL colours</b>					
Specify at order stage:	1 – 4	<b>516025</b>	○		
	5 – 9	<b>516025</b>			
	10 – 49	<b>516025</b>			
	50 – 99	<b>516025</b>			
	up 100	<b>516025</b>			