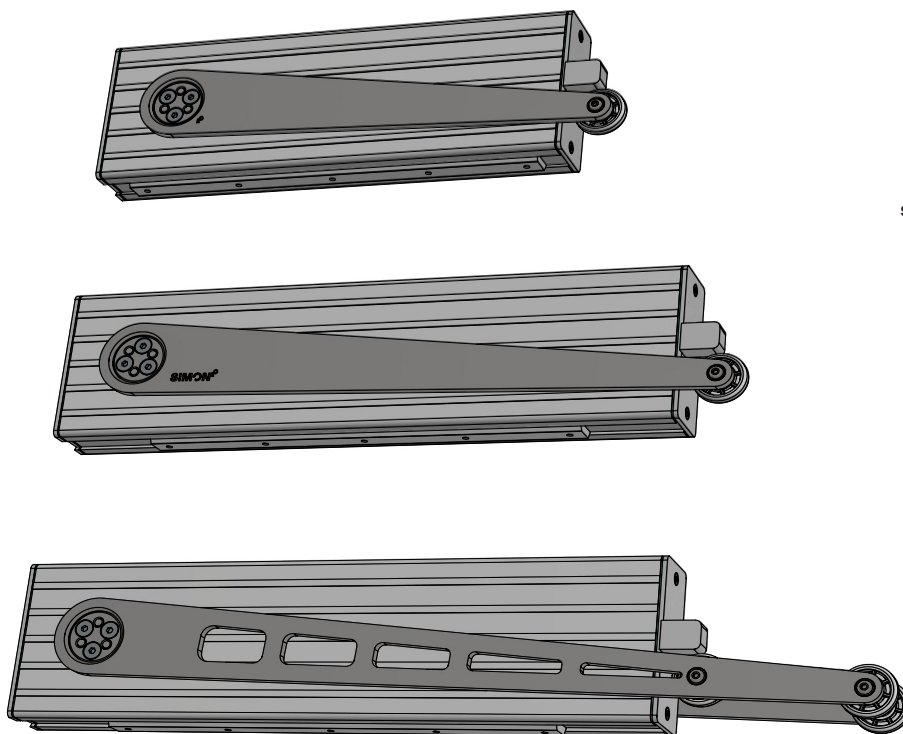


PA-KL²-T-K-50 PA-KL²-T-30/-50 PA-KL²-T-80

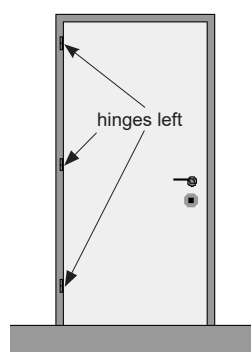
For further information
please visit our product-
website:



short.simon-protec.com/
pakl2ten

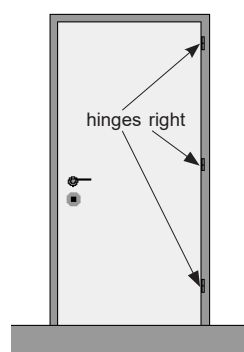


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Subject to technical changes and errors. All figures are exemplary.

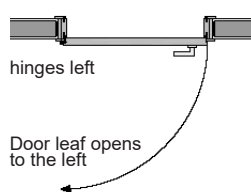


DIN left door

Front view



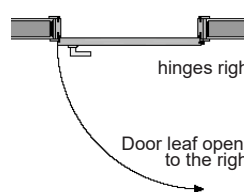
DIN right door



hinges left

Door leaf opens
to the left

Top view



hinges right

Door leaf opens
to the right



SIMON PROtec Systems GmbH • Medienstraße 8 • D-94036 Passau

+49 (0) 851 988 70-0 • +49 (0) 851 988 70-70 • info@simon-protec.com • www.simon-protec.com

i These operating instructions are only valid with the supplied
supplementary sheet „Safety instructions and Warranty conditions“!

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Figures and Dimensions

1. Figures and Dimensions

Figure 1: Door opener PA-KL²-T-K-50

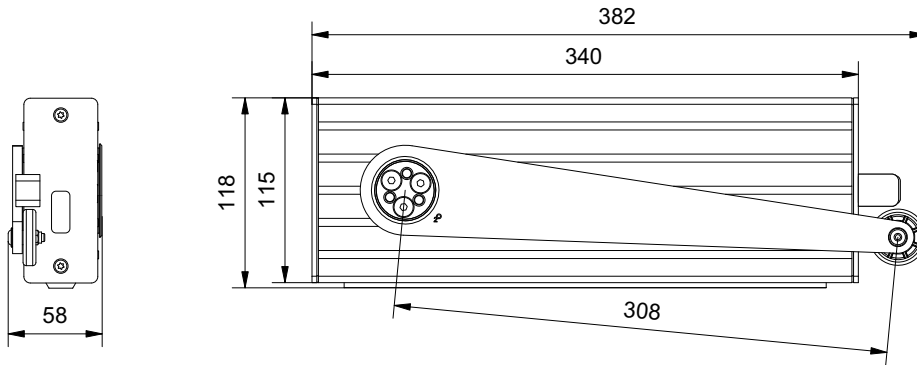


Figure 2: Door opener PA-KL²-T-30/PA-KL²-T-50

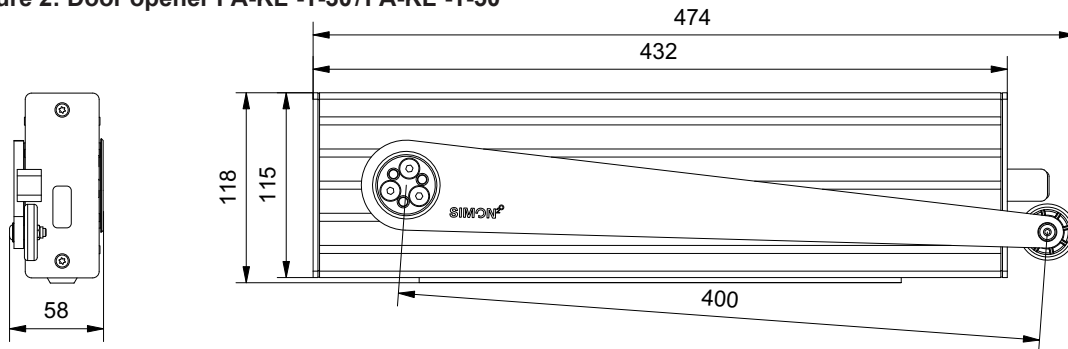


Figure 3: Door opener PA-KL²-T-80

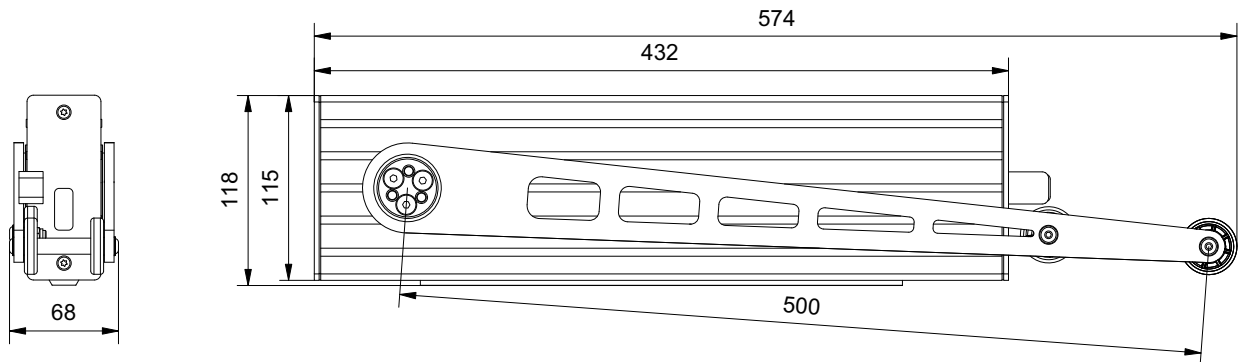


Figure 4: Mounting bracket K-KL²-T-MW

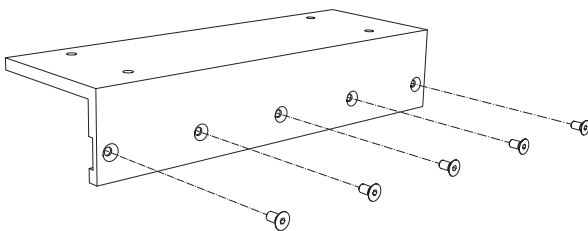


Figure 5: Mounting bracket K-KL²-T-MP

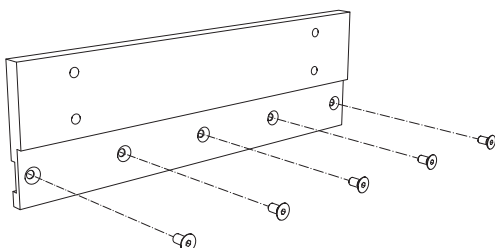
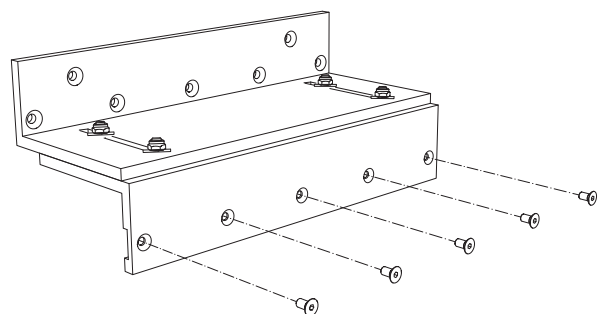


Figure 6: Mounting bracket K-KL²-T-80-MW



ATTENTION

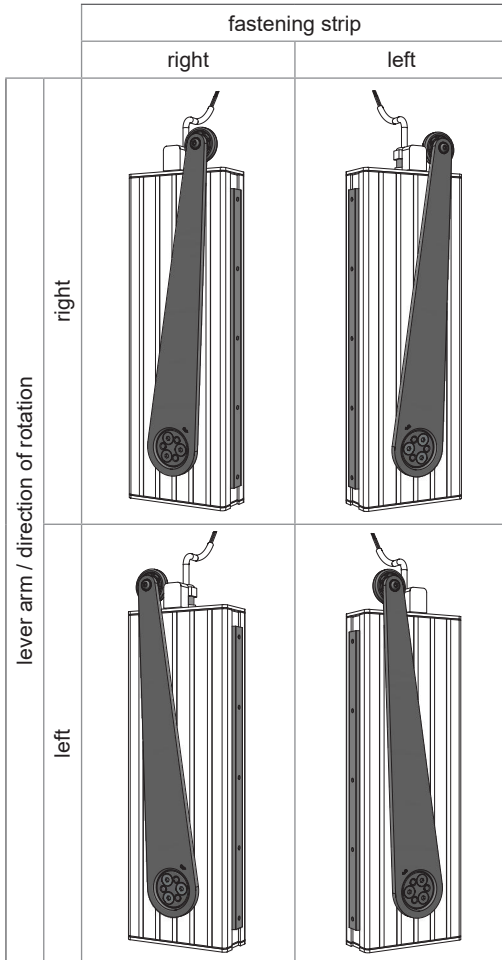
Ensure a tightening torque of 4 Nm when screwing the bracket to the fixing strip of the actuator!

Preparing the door opener

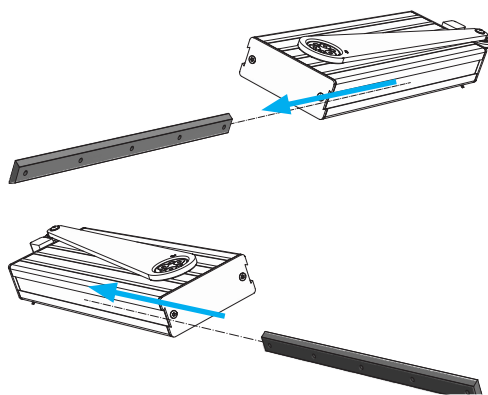
2. Preparing the door opener

Depending on the application the door opener must be adapted and/or a change of direction (e.g. via programming run) must be performed.

Standard delivery condition is lever arm "left" and fastening strip "right".



2.1. Change of fastening strip into the opposite



2.1.1. Door opener 800 N – PA-KL²-T-80

For the door opener PA-KL²-T-80 the fastening strip must always be placed on the opposite side of the zero position of the lever arm.

2.2. Programming run (standard-version)



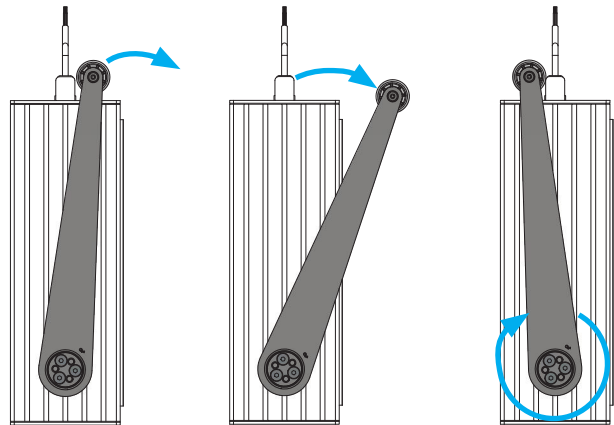
INFORMATION

The programming run can be carried out as often as required and must be carried out for the following application examples if necessary.

Alternatively, the door openers direction of rotation can be adjusted via SICO LINK.

2.2.1. Door opener "right" (delivery condition) to "left"

- Drive the door opener in direction "right":
 - wire **S** on +24 VDC
 - wire **O** on MINUS (GND)
- Drive up the lever arm a little.
- Switch off the voltage at **S** and **O**.



- Connect the wires **C1** and **C2** (programming mode).
- Operate the door opener again:
 - wire **S** on +24 VDC
 - wire **O** on MINUS (GND)
- The actuator must now drive in the desired direction "CLOSE – left", otherwise drive the actuator in reverse direction!
- Let the actuator drive until it switches off automatically in its end position.
- The new direction of rotation is saved now. The zero point is set to the end position "left".
- Switch off voltage at **S** and **O** and disconnect the wires **C1** and **C2** (programming port).
- Electrically insulate the wires **C1** and **C2**.

2.2.2. Door opener "left" to "right"

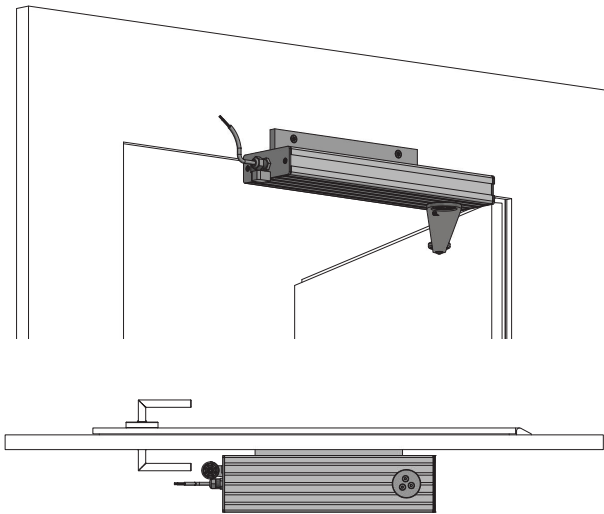
- Perform a programming run analog to chapter 2.2.1.
 - wire **S** on MINUS (GND)
 - wire **O** on +24 VDC

3. Mounting

- Prepare the door opener:
 - set direction of rotation of the lever arm
 - if necessary switch fastening strip to the other side
- Determine the mounting position (the position depends on the opening angle).
- Mount the bracket.
- Attach the door opener to the bracket.

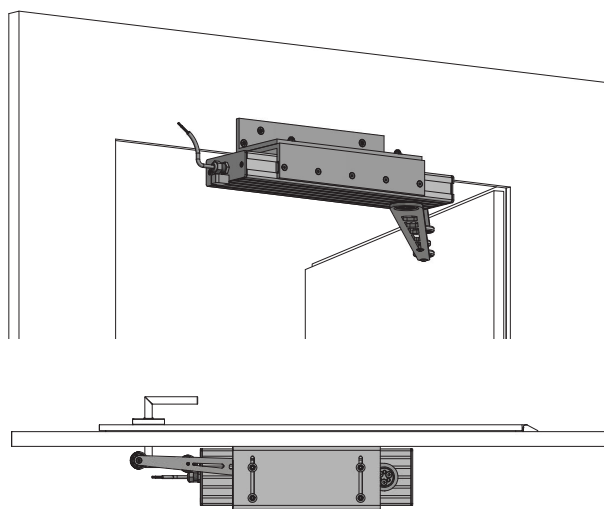
3.1. Mounting on the door frame

3.1.1. Mounting plate K-KL²-T-MP (PA-KL²-T-K-50 / PA-KL²-T-30/-50)



	DIN left	DIN right
lever arm	left	right
fastening strip	left	right

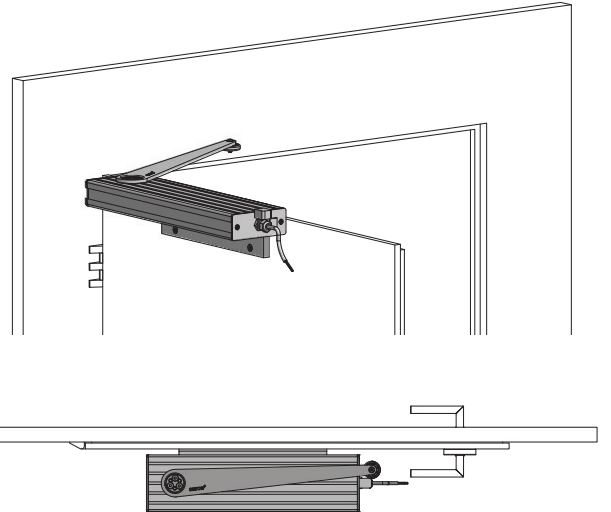
3.1.2. Mounting bracket K-KL²-T-80-MW



	DIN left	DIN right
lever arm	any	
fastening strip	opposite	

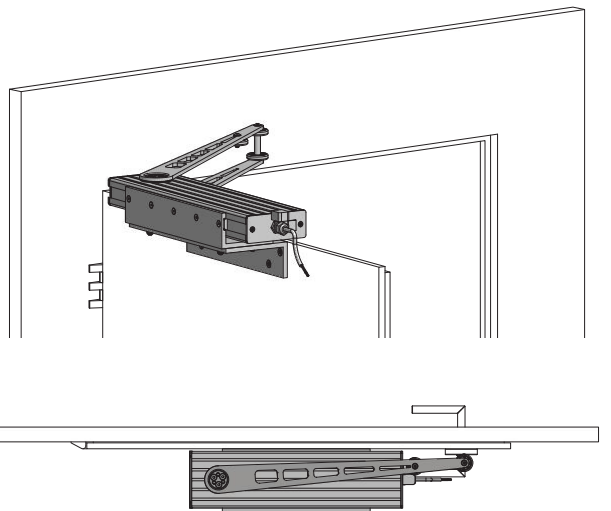
3.2. Mounting on the door leaf, inward opening

3.2.1. Mounting plate K-KL²-T-MP (PA-KL²-T-K-50 / PA-KL²-T-30/-50)



	DIN left	DIN right
lever arm	left	right
fastening strip	left	right

3.2.2. Mounting bracket K-KL²-T-80-MW

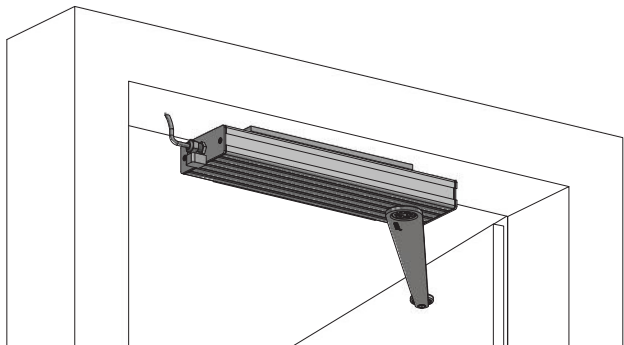
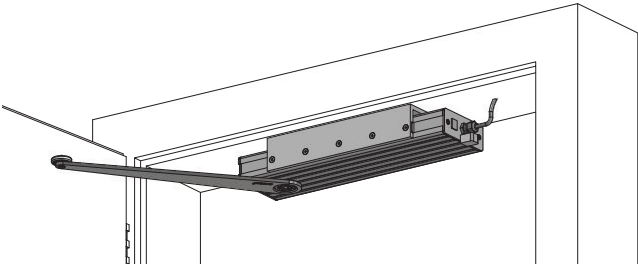


	DIN left	DIN right
lever arm	any	
fastening strip	opposite	

Mounting

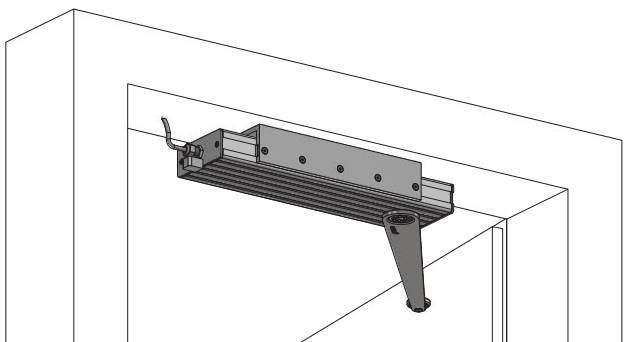
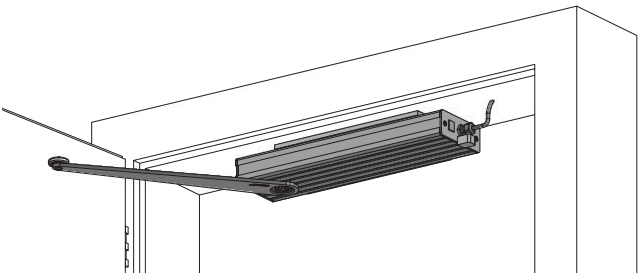
3.3. Mounting in the door reveal

3.3.1. Mounting bracket K-KL²-T-MW in front – lever arm at bottom (PA-KL²-T-K-50 / PA-KL²-T-30/-50)



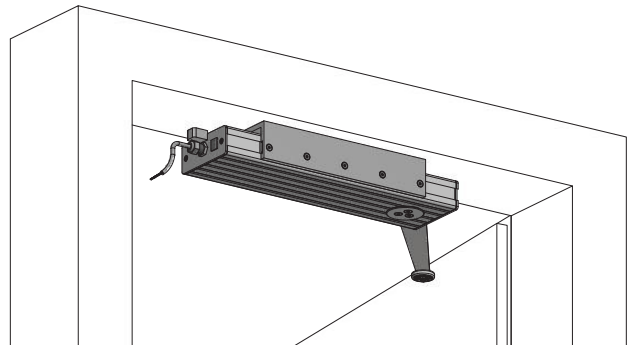
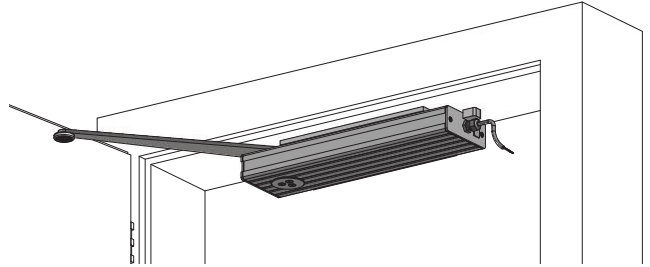
	DIN left	DIN right
lever arm	left	right
fastening strip	left	right

3.3.2. Mounting bracket K-KL²-T-MW at the rear – lever arm at bottom (PA-KL²-T-K-50 / PA-KL²-T-30/-50)



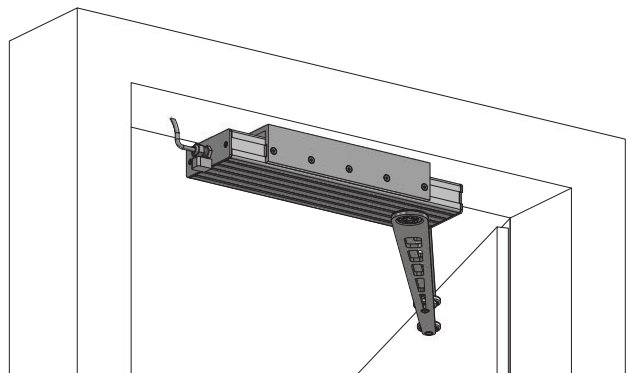
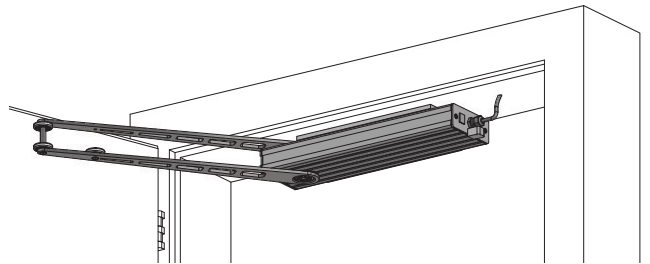
	DIN left	DIN right
lever arm	left	right
fastening strip	right	left

3.3.3. Mounting bracket K-KL²-T-MW at the rear – lever arm on top (PA-KL²-T-K-50 / PA-KL²-T-30/-50)



	DIN left	DIN right
lever arm	right	left
fastening strip	left	right

3.3.4. Mounting bracket K-KL²-T-MW at the rear – PA-KL²-T-80



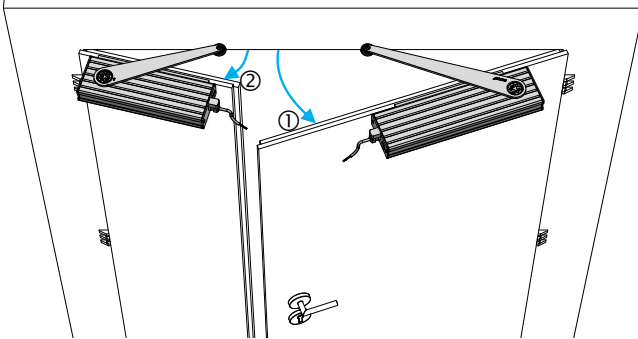
	DIN left	DIN right
lever arm	any	
fastening strip	opposite	

Mounting

3.4. Double-leaf doors (secondary sash application)

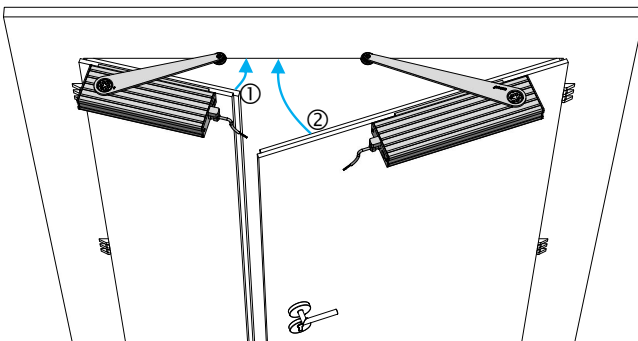
To ensure safe opening and closing of the door leaves, SICO LINK can be used to adjust the OPEN / CLOSE delay for each of two simultaneously operated actuators.

Figure 7: Secondary sash opening



- Operating "OPEN" simultaneously:
 - ① OPEN delay: factory setting
 - ② OPEN delay: at least OPEN delay time ① + 2 s

Figure 8: Secondary sash opening



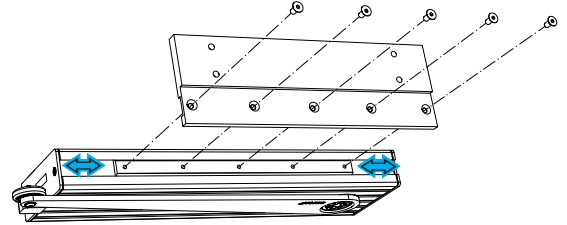
- Operating "CLOSE" simultaneously:
 - ① CLOSE delay: factory setting
 - ② CLOSE delay: at least CLOSE delay time ① + 2 s

3.5. Fine adjustment the opening angle



INFORMATION

The opening angle of the door can be adjusted by moving the door opener on the fastening strip!



- Loosen the fastening screws.
- Move the door opener to the desired position.
- Tighten the fastening screws with **4 Nm**.

4. Electrical connection

See the attached sheet "Safety instructions and Warranty conditions"!



ATTENTION

Unused wires must be electrically insulated.

The wires **C1** and **C2** must not be connected to each other during normal operation.

4.1. Power supply

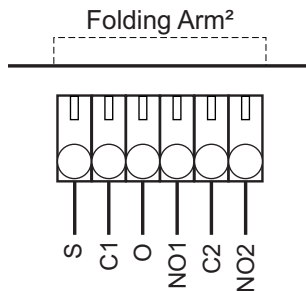
The power source must be designed for the drive. Voltage and amperage must match the specifications on the nameplate.

4.2. Preparation for installation

Before starting the installation, the required connection cable must be assembled. For this purpose use the plug included in the scope of delivery (see instructions in the accessory bag with SICO PLUG). For NSHEV according to EN 12101-2, the silicone connecting cable approved by the manufacturer must be used.



4.3. SICO-PLUG assignment



4.4. SICO-PLUG-INSTALL

We recommend the SICO-PLUG-INSTALL kit for a simplified and quick commissioning. Its extended and ergonomically shaped design ensures quick plugging in and unplugging (the connection cable is not included in the kit).

Figure 9

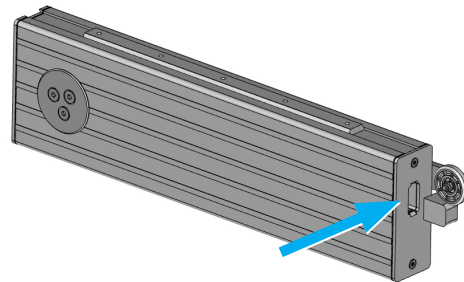


4.5. SICO LINK

The actuator is equipped with a parameterisation interface through which via SICO LINK

- the opening width can be set
- the cut-off current can be set in OPEN/CLOSE direction
- the start delay OPEN/CLOSE can be adjusted
- the direction of rotation can be changed
- a detailed status message of the actuator can be read out.

Figure 10: Parameterisation interface SICO LINK



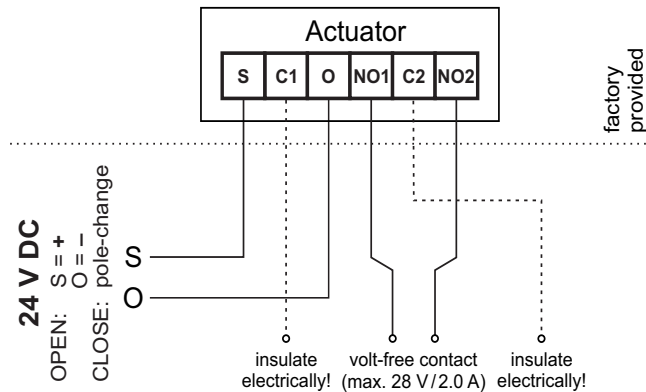
To connect the actuator with SICO LINK, the adapter cable SICO-USB-110 is required.

Figure 11: Adapter cable SICO-USB-110



Electrical connection

4.6. SICO PLUG connection

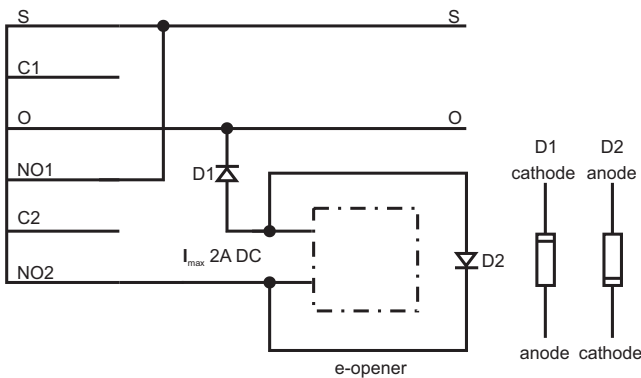


INFORMATION

In the "NC" hardware version, the normally open switch NO1 / NO2 is replaced by a normally closed switch (NC1 / NC2). In this case, the potential-free contact is open while supplied with power and closes on power cut off.

4.6.1. Connection examples

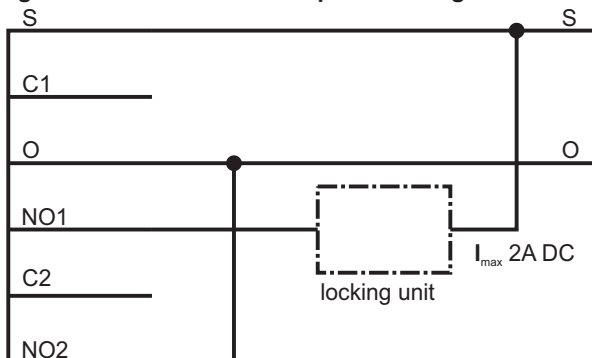
Figure 12: Connection example - E-Opener



ATTENTION

For applications with an electric contact, an external free-wheeling diode (D2) must be installed in the immediate vicinity of the electric contact (e.g. SB230). Furthermore, a blocking diode (D1) must be installed in the specified direction (e.g. SB230).

Figure 13: Connection example - Locking unit



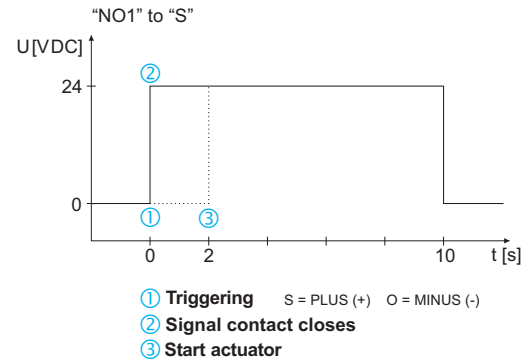
4.6.2. Feedback signal (contact NO/NC)

This signal is necessary e.g. for control purposes, running displays, e-opener, locking, etc.

4.6.2.a. Signal contact NO in direction "OPEN"

The signalling contact (normally open contact NO) is switched in driving direction "OPEN" as shown in the following diagram. It is possible e.g. for an application with an electric door lock (electric opener) to control the electric door lock via the signal contact.

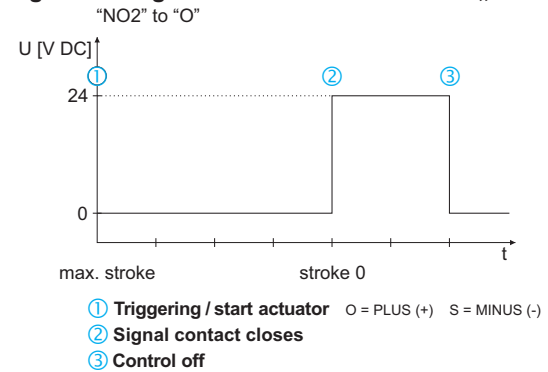
Figure 14: Signal contact NO in direction „OPEN“



4.6.2.b. Signal contact NO in direction "CLOSE"

The normally open contact (NO1/NO2) is switched in driving direction "CLOSE" when the actuator is switched off in end position "CLOSE".

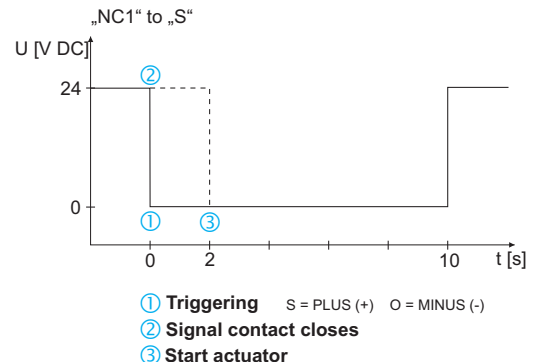
Figure 15: Signal contact NO in direction „CLOSE“



4.6.2.c. Signal contact NC in direction "OPEN"

The signalling contact (normally closed contact NC) is switched in driving direction "OPEN" as shown in the following diagram.

Figure 16: Signal contact NC in direction "OPEN"



Technical data

5. Technical data

Table 1: Electrical characteristics

Actuator type	PA-KL ² -T-K-50	PA-KL ² -T-30	PA-KL ² -T-50	PA-KL ² -T-80
Rated voltage	24 VDC			
Permissible rated voltage range	24 VDC ±15%			
Ripple of rated voltage (V _{pp})	max. 500 mV			
Undervoltage detection	Yes			
Rated current ⁽¹⁾	1.3 A	1.2 A	1.6 A	3.0 A
Maximum starting current in "OPEN"	1.43 A	1.32 A	1.76 A	3.3 A
Maximum starting current in "CLOSE"	0.6 A	0.6 A	0.6 A	0.6 A
Maximum cut-off current in "OPENING" direction	1.43 A	1.32 A	1.76 A	3.3 A
Maximum cut-off current in "CLOSE" direction	0.6 A	0.6 A	0.6 A	0.6 A
Current consumption after cut-off (closed current)	65 mA			
Cut-off via	built-in electronic overload cut-off			
Protection class	III			

(1) Maximum current consumption at nominal load.

Table 2: Volt-free contact (NO1/NO2)

Actuator type	PA-KL ² -T-xx
Rated voltage	max. 28 VDC
Relay contact load	2 A



ATTENTION

The maximum contact load must not be exceeded.

Table 3: Connection and operation

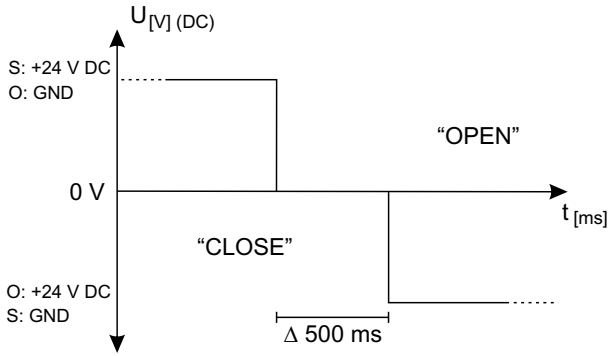
Actuator type	PA-KL ² -T-xx
Recommended connection cable standard	6 × 0.75 mm ²
Recommended connection cable NSHEV	Heat resistant silicone cable EWKF 6 × 0.75 mm ²
Pause when changing direction ⁽¹⁾	min. 500 ms
Switch-on duration	ED 30 % S2
Stability of opening and closing cycles	> 11.000
Sound level ⁽²⁾	< 70 dB (A)
Multiple triggering as per prEN 12101-9 / ISO 21927-9	allowed
Multiple triggering after stop	allowed
Maintenance	See the attached sheet "Safety instructions and Warranty conditions"!

(1) For the change of direction (pole change) it is necessary that the supply / control ensures a pause time (zero voltage range) of at least 500 ms.

(2) Measured at a distance of one metre under normal conditions.

Troubleshooting

Figure 17: Zero-volt range at changing of direction



ATTENTION

Voltage stability/quality: Allowed are only defined switch-off processes (voltage drop from 24 VDC to 0V in less than 10 ms).

This also applies in particular to switching processes from primary (mains operation) to secondary energy source (emergency power batteries).

Table 4: Mechanical properties

Actuator type	PA-KL ² -T-K-50	PA-KL ² -T-30	PA-KL ² -T-50	PA-KL ² -T-80
Nominal load in "OPEN"	500 N	300 N	500 N	800 N
Nominal load in "CLOSE" ⁽¹⁾	50 N			
Opening angle	122 deg			
Opening time	within 60 s			
Material / surface housing	Alu E6/EV1			
Material lever arm	Stainless steel			
Dimensions ⁽²⁾ (L × W × H mm)	382 × 58 × 118 mm	474 × 58 × 118 mm	474 × 58 × 118 mm	574 × 68 × 118 mm
Weight	3.70 kg	4.16 kg	4.22 kg	6.20 kg

(1) Optionally, other values are possible!
 (2) See chapter 1: "Figures and Dimensions" on page 3.

Table 5: Installation and environmental conditions

Actuator type	PA-KL ² -T-xx
Rated operating temperature	20 °C
Permissible ambient temperature range	0 – 75 °C
Protection class	IP 54
Usage range	Central European environmental conditions ≤ 2000 metres above sea level

Table 6: Approvals and certificates

Actuator type	PA-KL ² -T-xx
CE-compliant	in accordance with EMC directive 2014/30/EU and the low voltage directive 2014/35/EU

Table 7: Accessories

Actuator type	PA-KL ² -T-xx
A selection of numerous bracket sets is available. The technical data are only valid in connection with original accessories!	

6. Troubleshooting

Malfunction	Possible causes	Fault correction
The actuator does not work	No mains voltage	Check the fuse and the supply cable
	Connection cable defective	Check the connection cable
	Re-triggering blockage active	Energize the actuator in the opposite direction briefly and then again in the desired direction.
The actuator has the wrong direction of rotation	Connection terminals S(+) and O(-) reserved;	Swap connecting terminals S and O
	Direction of rotation is set incorrect	Set new direction of rotation <ul style="list-style-type: none"> Programming run/SICO LINK