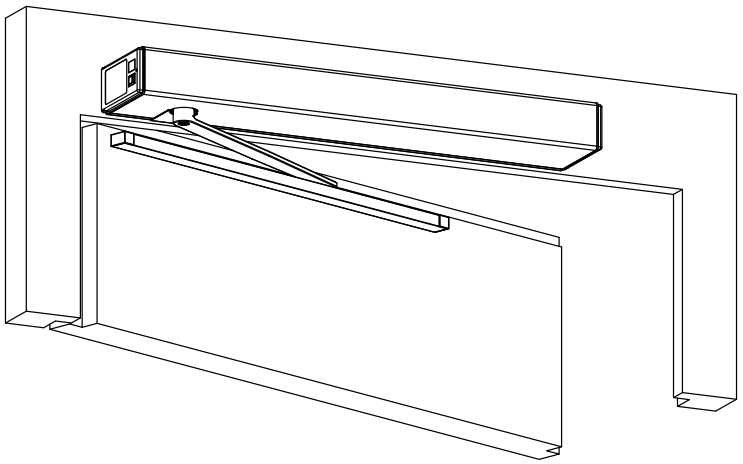
Swing door drive mechanism

FD 10

Mounting and operating instructions

Original



Com. no. ..... Pos. ..... Construction year .....

Operator .....

Operating place .....

0549-990/02a
2019.11

GILGEN DOOR SYSTEMS

TABLE OF CONTENTS

1 GENERAL REMARKS

The present instructions contains all instructions for mounting, commissioning, operation, service (maintenance/checking) as well as troubleshooting. It is the basis guaranteeing a faultless and safe operation of the installation and must be completely read and understood before starting the work.

The following document is associated with this installation:

• Control booklet	0549-991/12	onto the installation

Aplicable documents:

• Mounting and operating instructions	0549-990/02
• Operator manual	0549-991/02

1.1 Target group

All the work described in the present instructions must only be carried out by experts!

Experts are persons who, based on their professional training and experience, have sufficient knowledge in the field of powered windows, doors and gates. They are sufficiently familiar with the relevant federal regulations for work protection and accident prevention, with the guidelines and generally recognized rules applicable for this field of technology which enables them to evaluate if powered windows, doors and gates can be safely operated.

Only the trained experts of the manufacturer or the supplier are counted among these persons.

1.2 Adresses

Distribution agent/
After-sales service

Manufacturer

Gilgen Door Systems AG
Freiburgstrasse 34
CH-3150 Schwarzenburg
Phone +41 31 734 41 11
Fax +41 31 734 43 79
www.gilgendoorsystems.com
info@gilgends.com

1.3 Auxiliary tools and service performances

The auxiliary tools and service performances listed hereafter are available, depending on the respective situation and authorization (please ask your distribution agent):

- Company portrait
- Homepage
- E-shop (authorization)
- Solution Designer (the company's own product configuration system)
  - Project administration
  - Print out quotation and order confirmation for project
  - Configuration of installations
  - 3D-Visualization
  - Calculate prices for normalized and standard doors
  - Visualization of lists of parts
  - Draw up work drawings
- News
- Info-News via E-mail
- Product brochures
- Product presentation (PowerPoint)
- Submission texts
- Reference list
- Test/homologation certificates
- CAD data
- Application sheets
- Plans of installations and cutouts
- Training courses
- Spare parts
- Maintenance contracts
- Around-the-clock service (not available in all the countries)

2 SAFETY

2.1 Appropriate use

The swing door drive mechanism FD 10 has been exclusively designed for operating swing doors. Any other use beyond these application limits is deemed inappropriate and inadmissible! In the event of an inappropriate use of this system, the safety of the user may be jeopardized and/or the installation be damaged. The manufacturer declines all responsibility for these injuries/damages!

2.2 Safety notices

The present instructions uses the following symbols and notes in order to point out certain residual dangers:

Warning:
Involving danger to life and limb.

Attention:
A situation where material could be damaged or the function impaired.

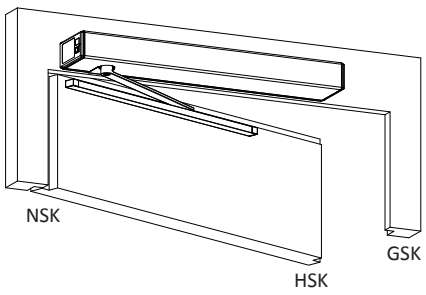
Note:
Hints which facilitate the work.

2.3 Safety regulations

2.3.1 Principles

- Children must not be involved in the cleaning or user maintenance of this system. Very young children must not operate the system. Young children must only operate the system when under the close supervision of an adult. Older children and vulnerable persons may use this system safely once they have been shown, while under suitable supervision, how to use it appropriately.
  Highly vulnerable persons can only use the system safely when under close supervision, or if it is fitted with corresponding additional equipment that amply fulfils the scope-of-use standards of the norm EN 16005.

- According to standard EN 16005 describing the safety-related requirements for automatic door systems, a risk evaluation is to be carried out (in consideration of the groups of door users and the local situation). This is the basis for the choice of the different protecting measures. The risk evaluation has to be carried out already during the planning stage to guarantee that the automatic door system can be safely installed and operated (see Risk evaluation for automatic swing door P 01.02.20).



NSK Secondary closing edge
HSK Main closing edge
GSK Opposing closing edge

- When configuring the installation, it is essential to make sure that the locally applicable regulations with regard to the closing edges are complied with, in order to avoid crushing and shearing points. It is particularly important to make sure that the door leaves do not have any sharp edges. The secondary closing edges must be designed by customers in such a fashion as to eliminate any dangerous crushing and shearing points.

- In order not to create any dangerous squeezing and shearing points, no structural modification must be made within the door surroundings, without prior authorization from Gilgen Door Systems. Furthermore, it is important that no objects (such as furniture, pallets, etc.) be placed in the vicinity of the door.

- The door leaves and their fillings must be manufactured according to the applicable standards (e.g. EN 16005). For the door leaf fillings, brake-proof material respectively safety glass shall be used. There must be no sharp cutting edges, and the glass must not produce sharp splinters if it is broken. Transparents door leaves (or their surfaces) must be clearly recognizable, e.g. by means of a permanent marking or dyed materials.

- The application limits must be observed.

- The choice of fastening elements depends on the construction base.

- Door sills or other protruding elements of the door system are to be identified by warning stickers or another appropriate marking means.

- In its assembled state, the installation must answer all the safety requirements specified by the machinery directive.

- The swing door drive mechanism FD 10 may only be installed and operated in dry rooms. If this condition cannot be fulfilled, the customer must provide sufficient protection from moisture.

- The swing door drive mechanism FD 10 must not be mounted within locations presenting explosion hazards. The presence of flammable gases or smoke represents a considerable safety hazard.

- All further interventions on and modifications of the installation that are not described in the present instructions are forbidden!

- Wrapping materials (such as plastic foil, polystyrene foam, strings, ...) represent a source of danger for children and must therefore be kept out of reach of the latter.

- The installation has been calculated, designed and manufactured on the basis of the latest state-of-the-art technology and the generally recognized safety-relevant rules and regulations. It may only be operated if it is in perfect condition, taking into account the specifications of the present instructions. Any use beyond the defined application limits is inadmissible!

- The installation is to be operated and maintained in such condition that the safety is guaranteed at all times. An integral part of this condition is the appropriate use, the compliance with the operating conditions prescribed by the manufacturer, as well as the regular service (maintenance/checking).

- The installation’s conformity with the machinery directive must be confirmed.

2.3.2 Service

In order to guarantee the safety of the users at all times, the installation must be checked with regard to its safe condition before the first commissioning and during normal operation, **at least once a year,** by a expert. The correct maintenance/checking must be confirmed by entering the date and signature into the control booklet.

2.3.3 Safety devices

It is inadmissible to bypass, shunt or disable the safety devices. Any defective safety devices may not be disconnected in order to be able to continue the operation of the installation.

2.3.4 Malfunctions

If any malfunctions occur which might be detrimental to the safety of the users, the installation must be immediately taken out of operation. It may only be taken back into operation after the malfunction has been repaired and all danger eliminated.

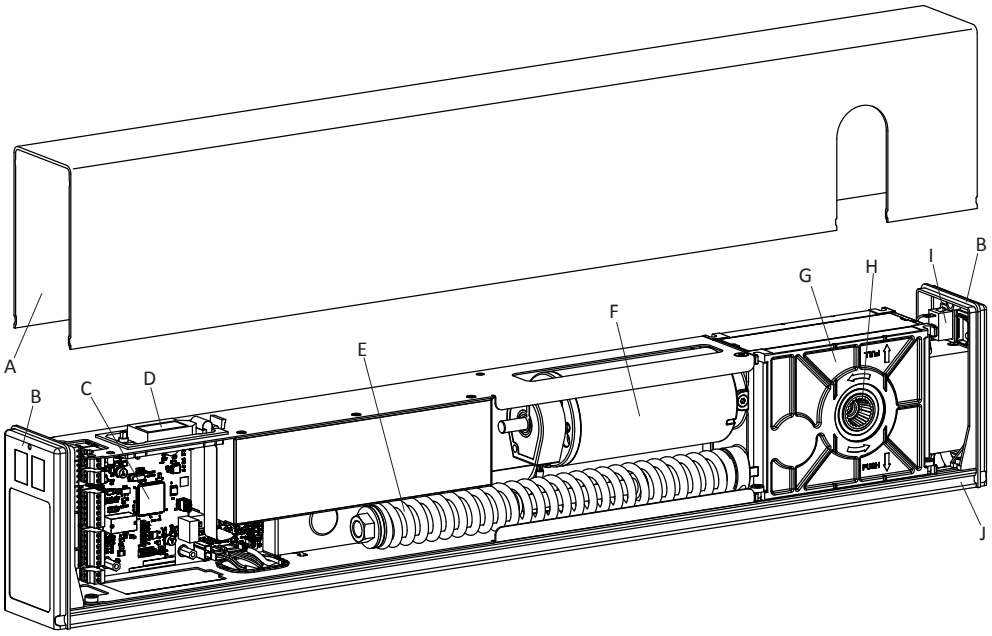
2.3.5 Accessories/Spare parts

A safe and reliable function of the installation can only be guaranteed if it is operated with the original Gilgen Door Systems accessories/spare parts. Gilgen Door Systems declines all responsibility for damages resulting from unauthorized modifications of the installation or from the use of foreign accessories/spare parts.

3 PRODUCT DESCRIPTION

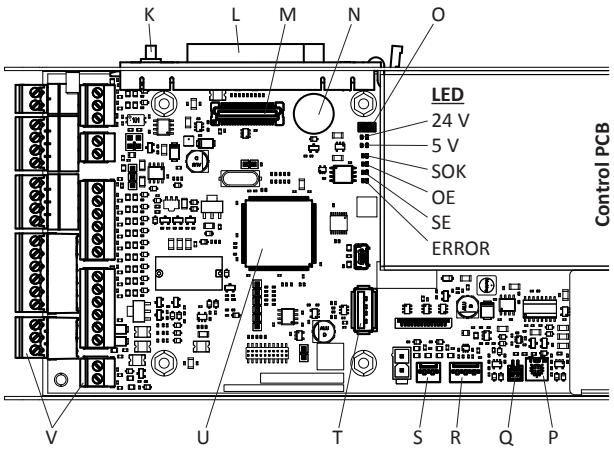
3.1 General remarks

The swing door drive mechanism FD 10 opens and closes the door leaf via a rod assembly (is not shown in the illustration).



Drive mechanism

A Drive mechanism covering
B Side cover
C Control
D Control unit (Joystick + LC-Display)
E Spring unit
F Direct current motor
G Gear
H Output shaft
I Program selector switch
J Chassis profile



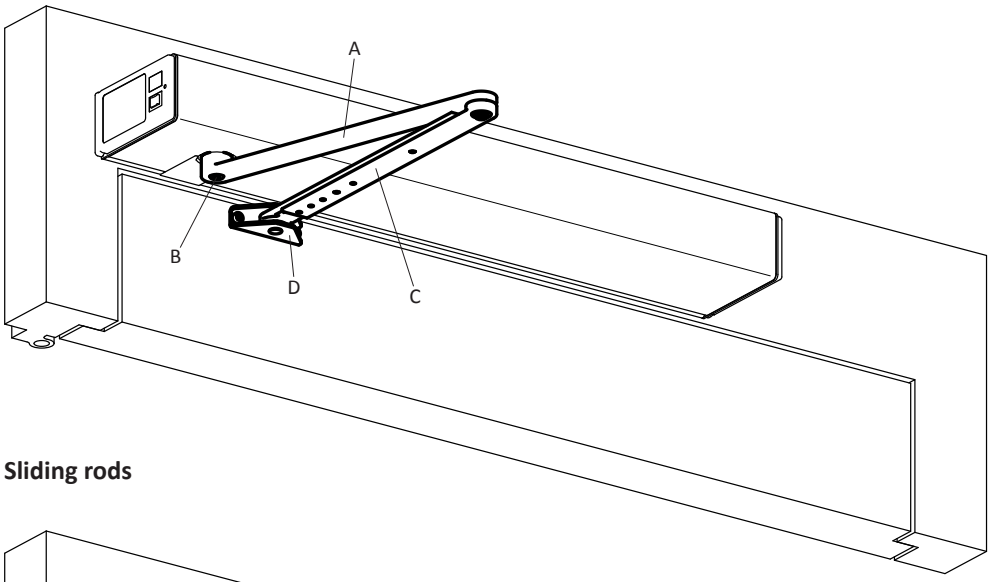
Control PCB

K Joystick
L LC-Display
M Options connection
N Buzzer
O Fire protection (Jumper)
P Potentiometer for slam cushioning
Q Connection of the reference switch
R Rotary shaft encoder
S Connection program selector switch
T USB
U Processor
V Connection terminals

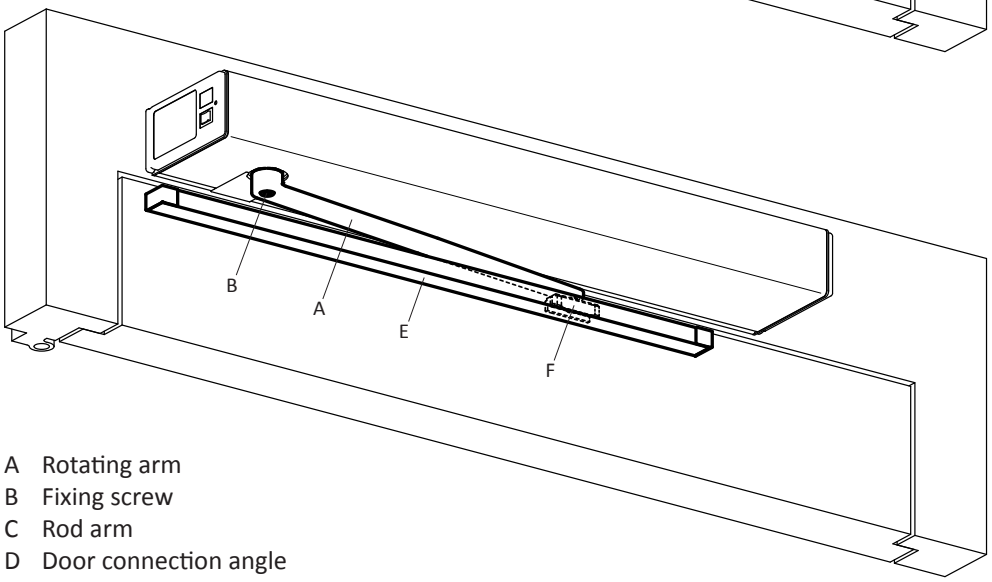
LED

24 V		green = i.O.
5 V		green = i.O.
SOK	System	green flashing = i.O.
OE	Opening element	blue = activ
SE	Safety element	yellow = activ
ERROR	Error	red

Normal rods



Sliding rods



A Rotating arm
B Fixing screw
C Rod arm
D Door connection angle
E Sliding rail
F Glider

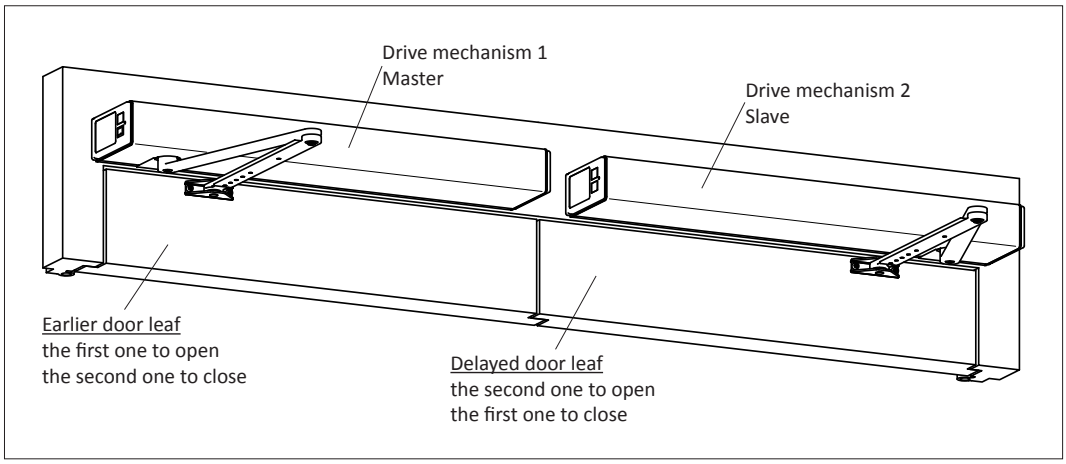
3.2 Standard application

During normal operation, the opening and closing movements of the door leaf are motorized. The automatically opening is performed via opening elements. The automatically closing starts as soon as the programmed hold-open time has expired.

Function in the event of a mains failure
The door leaf is closed from any position by means of spring power. The motor attenuation ensures a controlled closing.

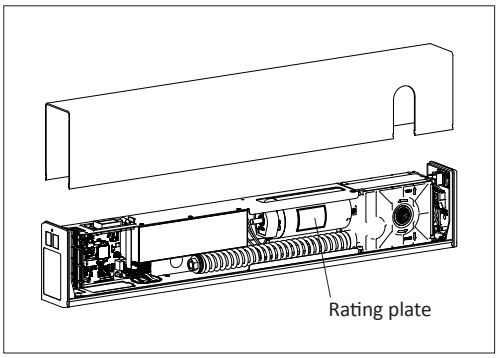
3.3 Automatic closing sequence control

For bi-parting installations, two separate FD 10 swing door drive mechanisms are used, which are connected via connection terminals.



3.4 Rating plate

The rating plate (including TÜV and EC identification) can be found on the direct current motor (below the drive mechanism covering).



3.5 Technical data

Drive mechanism	Standard	
Power transmission	Normal rods	
	Sliding rods	
Dimensions drive mechanism	Height 70 mm	
	Width 730 mm	
	Depth 125 mm	
Weight drive mechanism	8,2 kg	
Ambient temperature	-15...+50 °C	
May only be used in dry rooms	max. relative humidity 85 %	
Protection type	IP 20	
Operating voltage	230 VAC (+10/-15 %), 50 Hz	
Mains supply by customer	230 VAC (+10/-15 %), 50 Hz, 10/13 A	
Power consumption drive mechanism	max. 350 W	
Motor power rating	100 W	
Power supply external comsumer	24 VDC (±10 %), 1,4 A	
Torque output shaft	56 Nm permanent	
	165 Nm max.	
Lintel depth	normal rods	max. 250 mm
	sliding rods	pl -50/+150 mm
		ps -50/+150 mm
Door leaf opening angle	max. 105°	
Door leaf weight	max. 150 kg	
Door leaf width	730...1'100 mm (lintel mounting)	
Opening speed	2,4...20 s adjustable (max. 40°/s)	
Closing speed	2,4...20 s adjustable (max. 40°/s)	
Range of the accelerating function (foreceful closing) (without mains power)	≈10...15° not adjustable	
Motor damping (without mains power) within the range of the accelerationg function (forceful closing)	stepless adjustable (adjusting trimmer)	
Hold-open time	0...60 s	
Hold-open time Night	0...180 s	

3.6 Application limits without safety elements according to EN 16005

Warning:
In the event of swing doors installed in a non publicly accessible areas, without installation of safety elements that monitor the door leaf movement, the setting values specified hereafter for the **opening speed Vo** and the **closing speed Vc** must not be exceeded.
Opening force Fo and closing force Fc = max. 4!

Lintel mounting (all rod assemblies)

Leaf width \ Leaf weight		0...40 kg	41...60 kg	61...80 kg	81...100 kg	101...120 kg	121...150 kg
	730...750 mm	12	11	10	9	8	7
EN 2	751...850 mm	11	10	9	8	7	7
EN 3	851...950 mm	10	9	8	7	6	6
EN 4	951...1'100 mm	9	8	7	6	5	5

4 MOUNTING

4.1 General

Attention:
It is recommended that a door leaf stop piece be mounted by the customer.
This stop piece prevents the door leaf from being damaged in the manual operating mode.

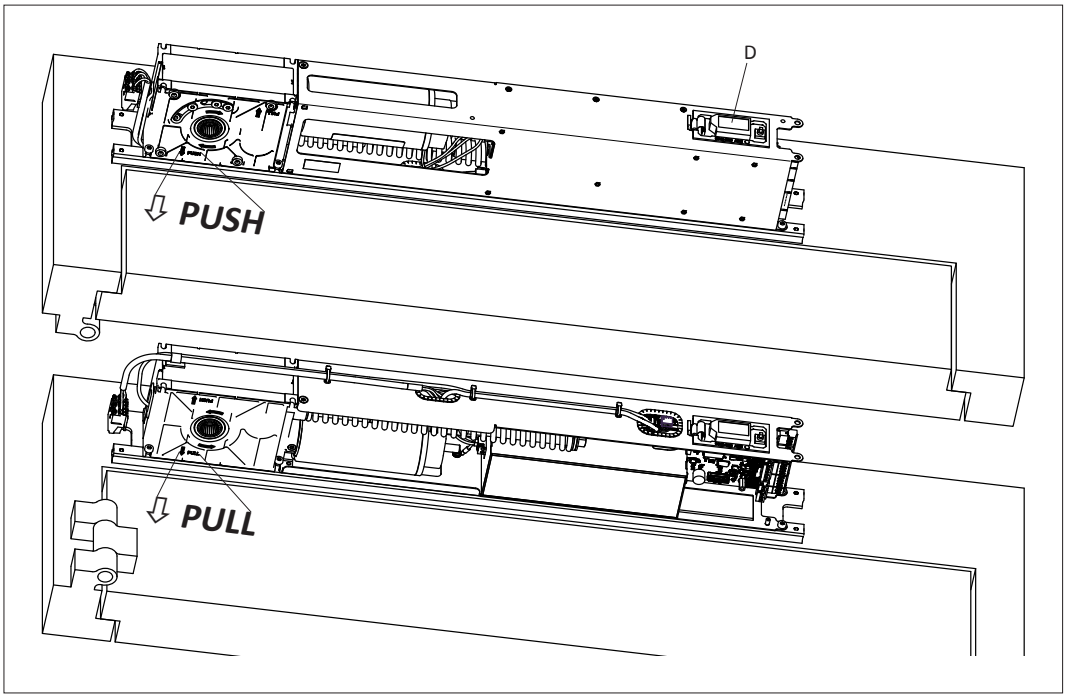
Attention:
Check the free running movement of the door leaf. Should it fail to move smoothly and silently, or if it is out of balance (i. e. it opens or closes by itself), these problems must be eliminated first!

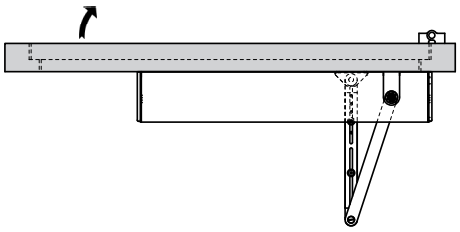
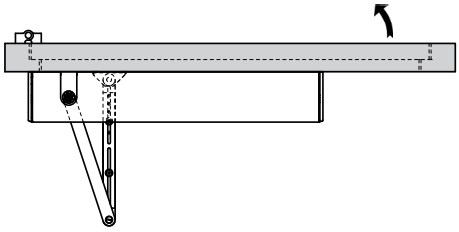
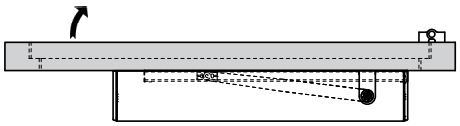
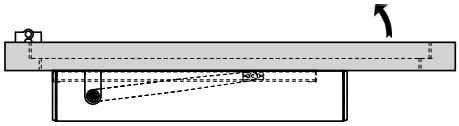
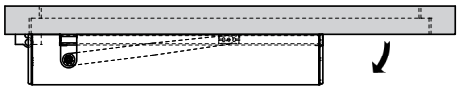
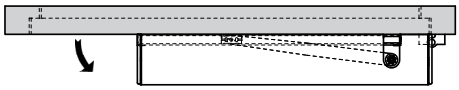
Warning:
The fastening bases must provide sufficient solidity. If necessary they have to be reinforced by the appropriate means.

Attention:
The maximum admissible undulation of the fastening base is 1 mm. The drive mechanism must be fastened without torsion and perpendicularly, using all the six fixing holes!

4.2 Mounting versions

Note:
The output shaft of the drive mechanism is close to the door hinge at all times.
The drive mechanism turns in one direction only. It must rotate through 180° (depending on the type of installation).
The position of the control unit (D) must be established in advance accordingly.



DIN left	DIN right
	
Normal rods RS 0548-163 pushing function Lintel mounting see chapter 4.4 Lintel depth 0...250 mm Drive mechanism 0549-010 alu / 0549-011 inox	**Normal rods RS** 0548-163 pushing function Lintel mounting see chapter 4.4 Lintel depth 0...250 mm Drive mechanism 0549-010 alu / 0549-011 inox
	
Sliding rods RG 0548-164 pushing function Lintel mounting see chapter 4.5 Lintel depth -30/+150 mm Drive mechanism 0549-010 alu / 0549-011 inox	**Sliding rods RG** 0548-164 pushing function Lintel mounting see chapter 4.5 Lintel depth -30/+150 mm Drive mechanism 0549-010 alu / 0549-011 inox
	
Sliding rods RG 0548-164 pulling function Lintel mounting see chapter 4.6 Lintel depth -50/+150 mm Drive mechanism 0549-010 alu / 0549-011 inox	**Sliding rods RG** 0548-164 pulling function Lintel mounting see chapter 4.6 Lintel depth -50/+150 mm Drive mechanism 0549-010 alu / 0549-011 inox

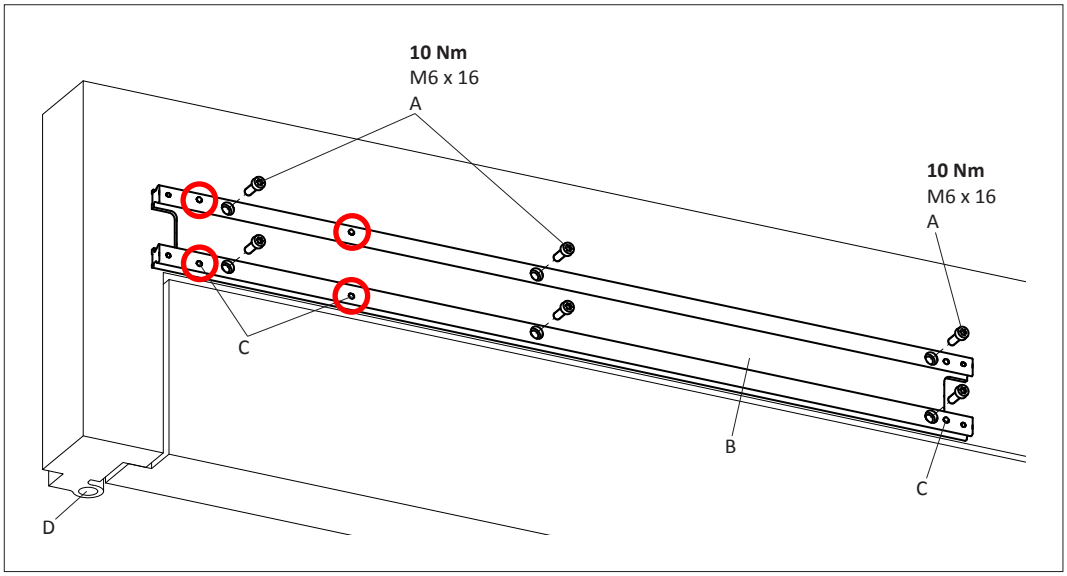
4.3 Drive mechanism

1. Mark and drill fixing holes in the lintel/door leaf in accordance with the situation.

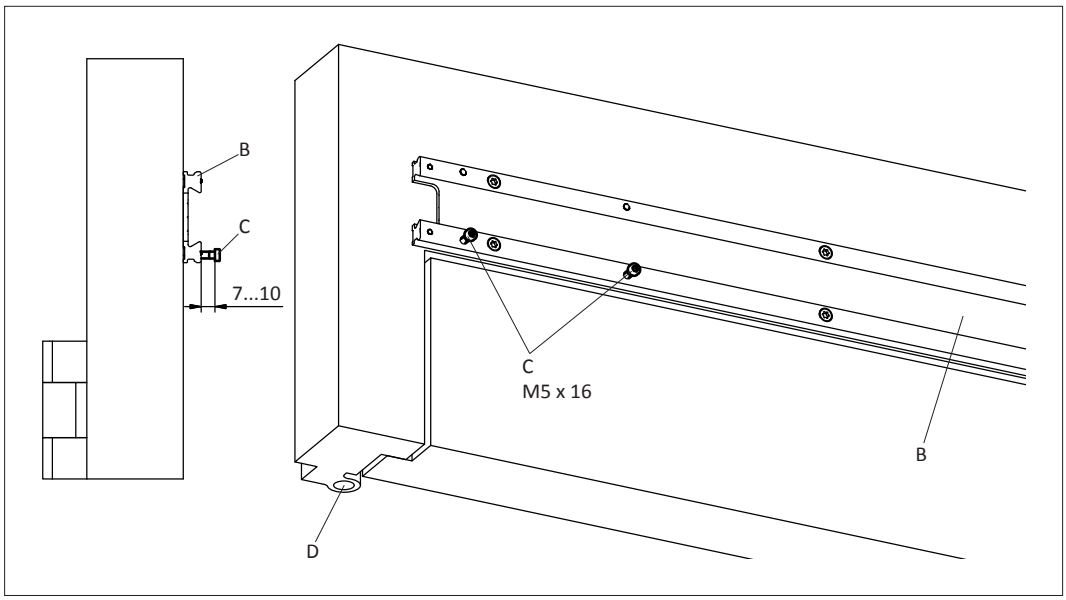
Note:
You can use the chassis profile (B) as a drilling template.
Observe the alignment of the chassis profile (B).
Four of the six drive-module fixing screws (C) are located near to the door hinge (D).

2. Use the six fixing screws (A) to mount the chassis profile (B).

Warning:
Tighten all the six fixing screws (A) with a torque of **10 Nm**!



3. Attach the drive module to the chassis profile (B):
   a) Provisionally attach the two lower screws (C) – of the four nearer to door hinge (D) – to chassis profile (B) at a distance, measured from screw-head to chassis, of 7 to 10 mm.

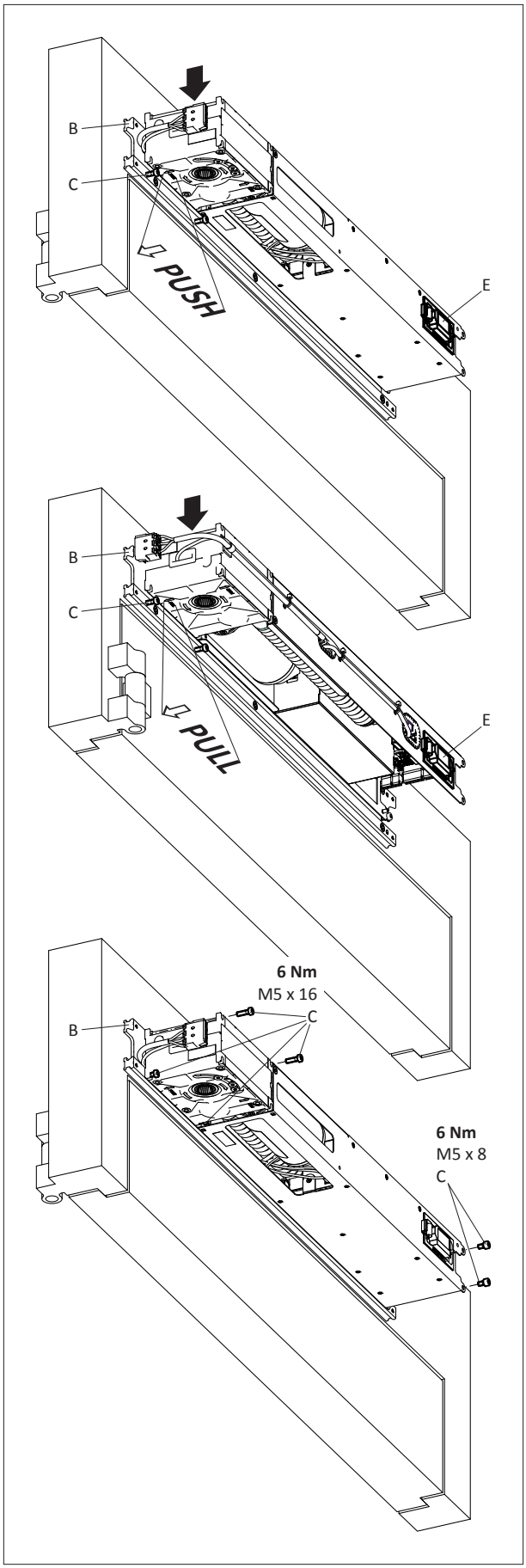


b) For <u>normal rods RS</u> and <u>sliding rods RG pushing function</u>:
Hang the drive module, with the <u>PUSH</u> sign facing the chassis profile (B), onto the two pre-inserted screws (C). Adjust the position of the control unit (E) before proceeding.

c) For <u>sliding rods RG pulling function</u>:
Hang the drive module, with the <u>PULL</u> sign facing the chassis profile (B), onto the two pre-inserted screws (C).

d) Tighten all the six fixing screws (C).

STOP Warning:
Tighten all the six fixing screws (C) with a torque of **6 Nm**!



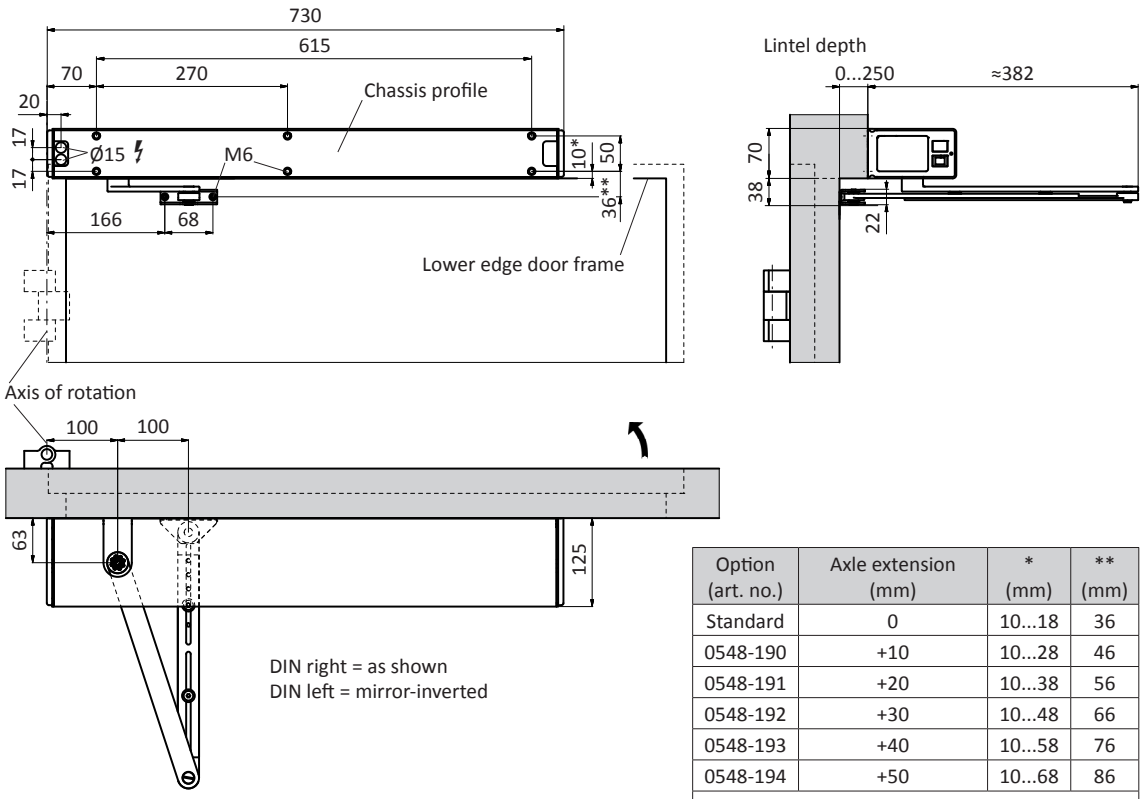
4.4 Normal rods RS pushing function / Lintel mounting

Material:

1	Drive mechanism	0549-010	Covering aluminium
	Drive mechanism	0549-011	Covering inox
	incl. fixing set	0549-104	
1	Normal rods RS	0548-163	

Procedure:

1. Mark out/drill the fastening holes on the lintel/door leaf and mount the drive mechanism.



Option (art. no.)	Axle extension (mm)	* (mm)	** (mm)
Standard	0	10...18	36
0548-190	+10	10...28	46
0548-191	+20	10...38	56
0548-192	+30	10...48	66
0548-193	+40	10...58	76
0548-194	+50	10...68	86
⇨ adjust the dimensions accordingly			

2. Close the door leaf.

3. Separate the rotating arm (C) from the rod arm (B) by loosen the screw (E).

4. Fasten the rod arm (B) by means of the door connection angle (A) onto the door leaf.

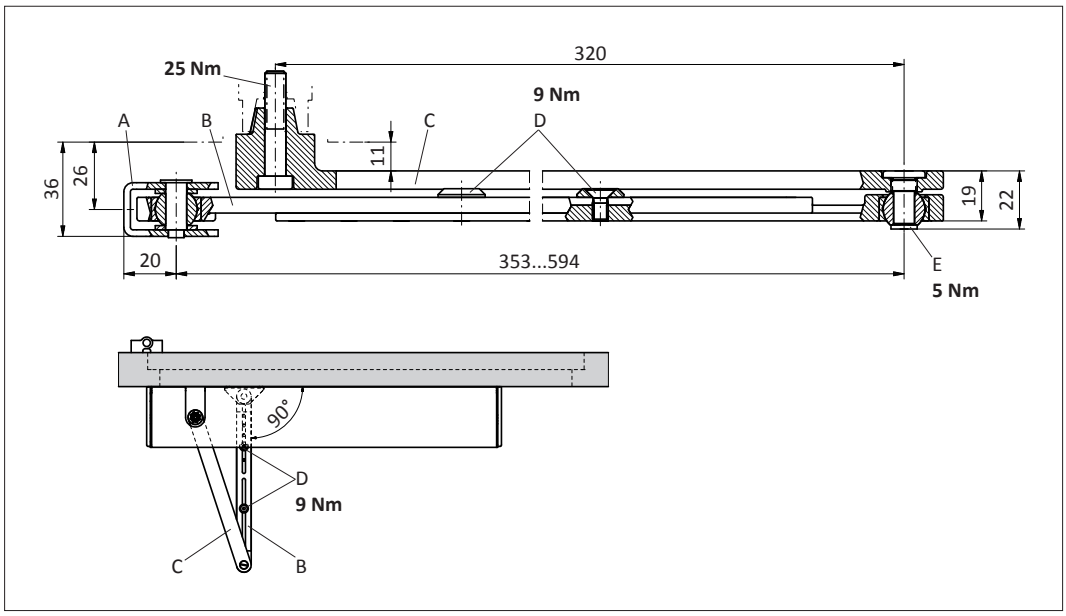
5. Position the rotating arm (C) approx. perpendicularly with regard to the door leaf and screw it down in this position ⇨ Tightening moment **25 Nm**.

6. Slightly loosen the screws (D) and fasten the rotating arm (C), by means of the screw (E) to the rod arm (B) ⇨ Tightening moment **5 Nm**.
   Attention:
   Adjust the rods to the required length. Choose the largest possible distance between both screws (D).

7. Prestress the rotating arm (C) until the rod arm (B) forms a right angle with the door leaf. Fasten the rod arm (B) by means of the screws (D) ⇨ Tightening moment **9 Nm**.

Attention:
Check the motional sequence of the door leaf: The rods must not touch!

⇨ forward to chapter 4.7



4.5 Sliding rods RG pushing function / Lintel mounting

Material:

1	Drive mechanism	0549-010	Covering aluminium
	Drive mechanism	0549-011	Covering inox
	incl. fixing set	0549-104	
1	Sliding rods RG	0548-164	650 mm incl. sliding bolts 18/46 mm

Procedure:

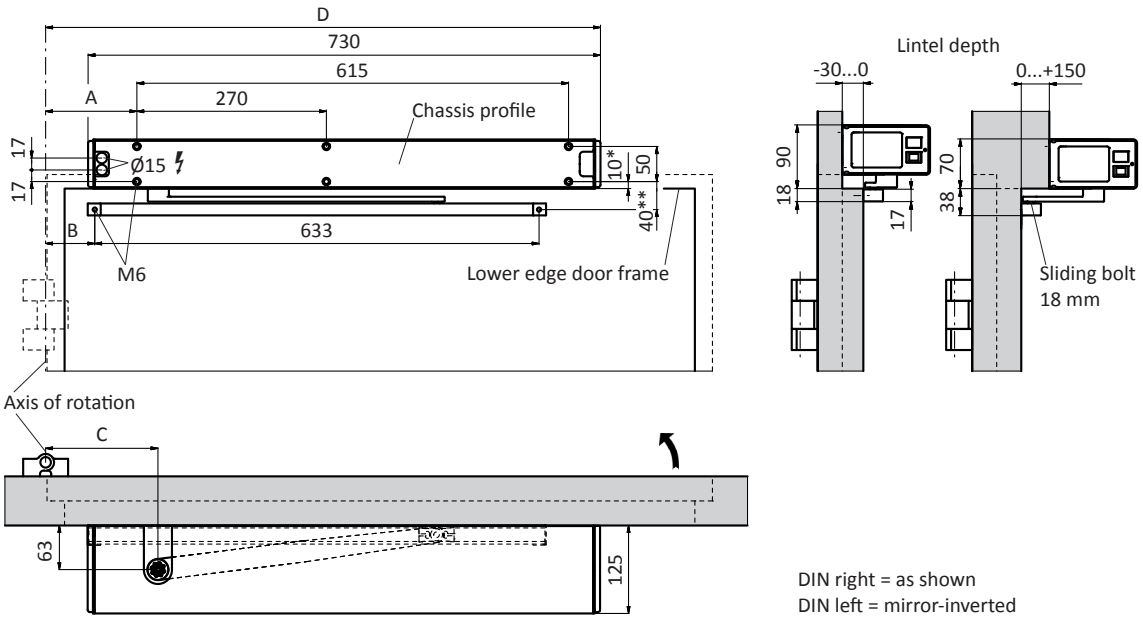
1. Mark out/drill the fastening holes on the lintel/door leaf and mount the drive mechanism.

Note:
The illustration shows the 18 mm sliding bolt. Depending on the situation, this bolt can be replaced by the version 46 mm. This will change the respective dimensions by plus 28 mm.

Lintel depth (mm)	Max. opening angle (°)	Rod assemblies (art. no.)	A (mm)	B (mm)	C (mm)	D (mm)
-30...+30	105	0548-164	130	70	160	790
31...50	105	0548-164	130	60	160	790
51...80	105	0548-164	140	50	170	800
81...100	105	0548-164	150	50	180	810
101...120	100	0548-164	150	40	180	810
121...150	95	0548-164	160	30	190	820

With lintel depths >100 mm we recommend using the normal rods.

Option (art. no.)	Axle extension (mm)	* (mm)	** Sliding bolt 18 mm	** Sliding bolt 46 mm
Standard	0	10...18	40	68
0548-190	+10	10...28	50	78
0548-191	+20	10...38	60	88
0548-192	+30	10...48	70	98
0548-193	+40	10...58	80	108
0548-194	+50	10...68	90	118
⇨ adjust the dimensions accordingly				



DIN right = as shown
DIN left = mirror-inverted

2. Close the door leaf.

3. Screw down the rotating arm (D) on the drive unit ⇨ Tightening moment **25 Nm**.
   Attention:
   The pre-stressing of the rotating arm (D) depends on the existing lintel depth.
   Example: Lintel depth 0 mm, pre-stressing of the rotating arm (D) ≈ 15° (1 grid increment of the output shaft = 15°).

4. Slide the open position stop piece (B) into the sliding rail (C).

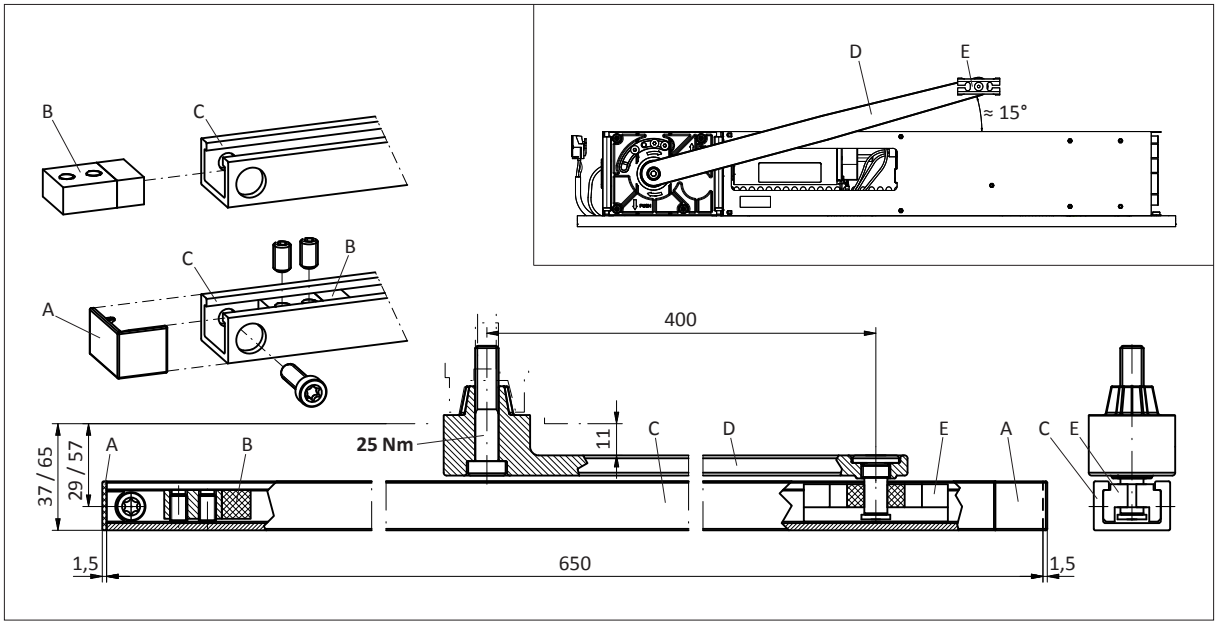
5. Slide the sliding rail (C) over the glider (E) and bolt it onto the door leaf.

6. Screw down the open position stop piece (B) approx. 5° before the door leaf reaches the maximum open position.

7. Insert the covering caps (A) on both sides.

Attention:
Check the motional sequence of the door leaf: The rods must not touch!
If the glider (E) makes screeching noises, it needs to be lubricated wih a little WD40.

⇨ forward to chapter 4.7



4.6 Sliding rods RG pulling function / Lintel mounting

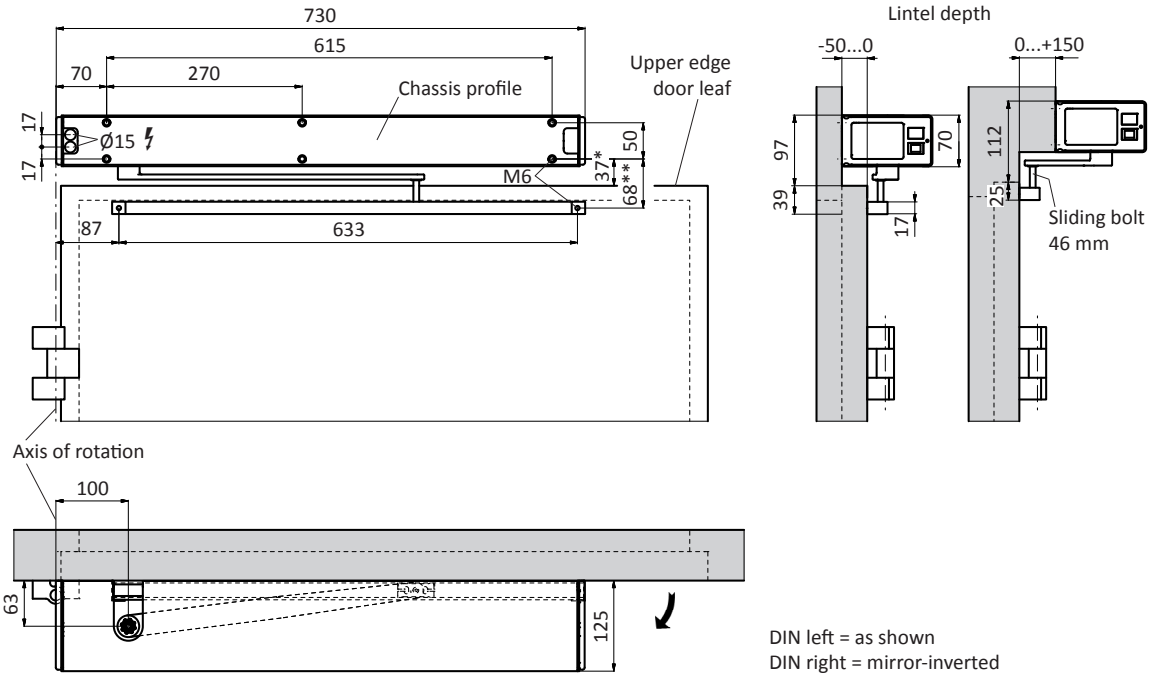
Material:

1	Drive mechanism	0549-010	Covering aluminium
	Drive mechanism	0549-011	Covering inox
	incl. fixing set	0549-104	
1	Sliding rods RG	0548-164	650 mm incl. sliding bolts 18/46 mm

Procedure:

1. Mark out/drill the fastening holes on the lintel/door leaf.

Note:
The illustration shows the 46 mm sliding bolt. Depending on the situation, this bolt can be replaced by the version 18 mm. This will change the respective dimensions by minus 28 mm.



Option (art. no.)	Axle extension (mm)	* Sliding bolt 46 mm	** Sliding bolt 46 mm	* Sliding bolt 18 mm	** Sliding bolt 18 mm
Standard	0	31...59	68	31	40
0548-190	+10	41...69	78	41	50
0548-191	+20	51...79	88	51	60
0548-192	+30	61...89	98	61	70
0548-193	+40	71...99	108	71	80
0548-194	+50	81...109	118	81	90
⇨ adjust the dimensions accordingly					

2. Close the door leaf.

3. Prior to the installation of the drive unit:
   Screw down the rotating arm (D) on the drive unit ⇨ Tightening moment **25 Nm**.
   Attention:
   The pre-stressing of the rotating arm (D) depends on the existing lintel depth.
   Example: Lintel depth 0 mm, pre-stressing of the rotating arm (D) ≈ 15° (1 grid increment of the output shaft = 15°).

4. While mounting the drive unit, push the rotating arm (D) back by the pre-stressing angle of 20°.

5. Slide the open position stop piece (B) into the sliding rail (C).

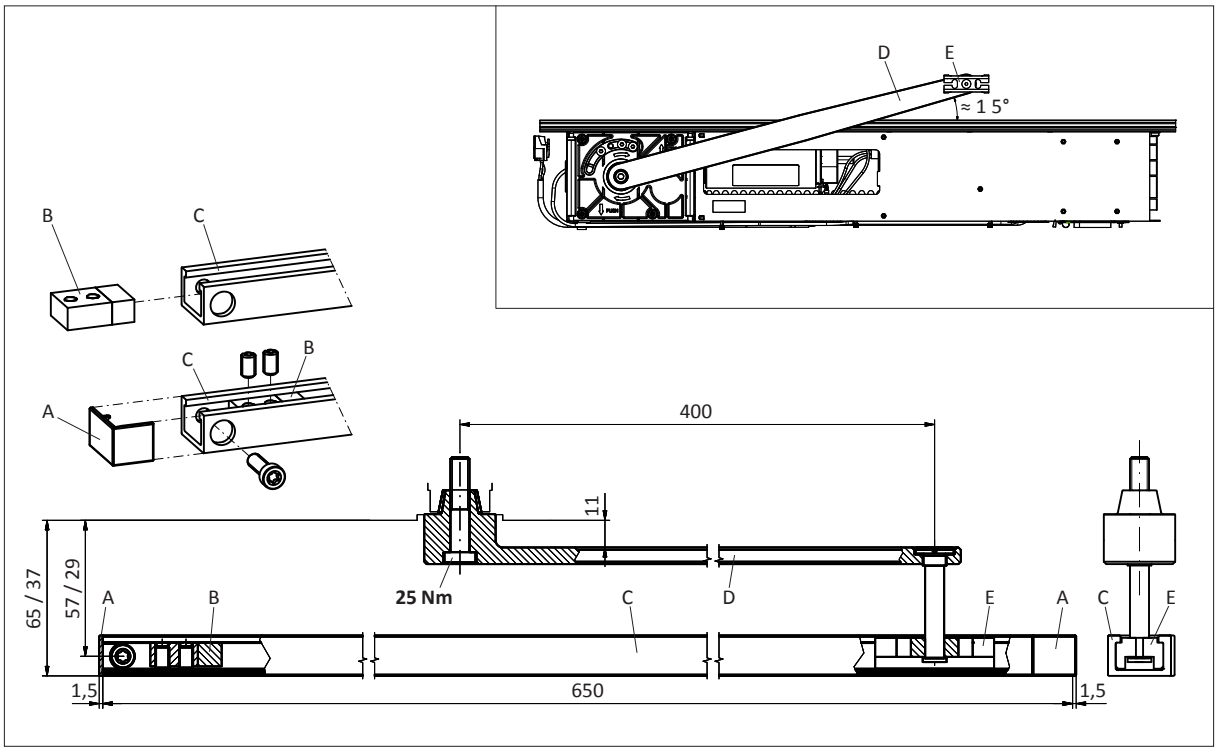
6. Slide the sliding rail (C) over the glider (E) and bolt it onto the door leaf.

7. Screw down the open position stop piece (B) approx. 5° before the door leaf reaches the maximum open position.

8. Insert the covering caps (A) on both sides.

Attention:
Check the motional sequence of the door leaf: The rods must not touch!
If the glider (E) makes screeching noises, it needs to be lubricated wih a little WD40.

⇨ forward to chapter 4.7



4.7 Adjusting the internal open position stop piece

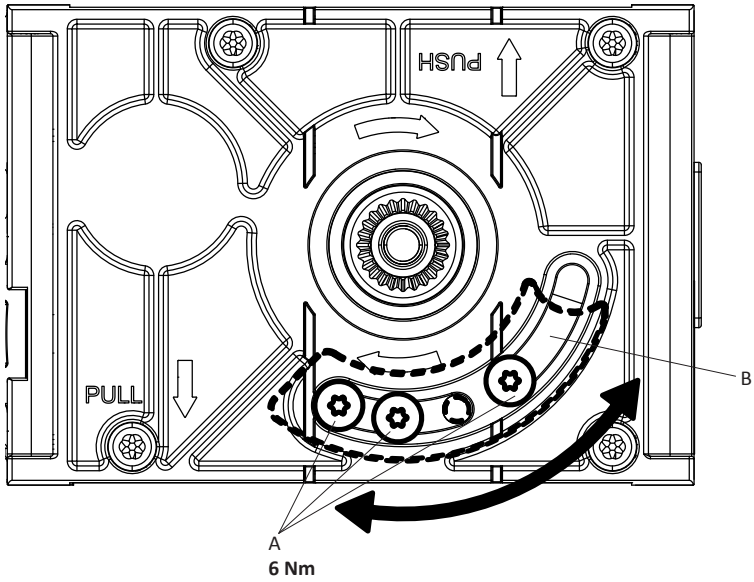
Procedure:

1. Loosen (but do not remove) the three screws (A) on the open position stop piece (B).

Note:
If the open position stop piece (B) sticks, gently tap the screw heads to loosen it.

2. Swivel the door leaves into their desired opening position (external open position stop piece, maximum opening angle).

3. Push the open-position stop piece (B) as far as it will go, and tighten all the screws (A): Tightening moment **6 Nm**.



4.8 Adjusting the pre-stressing of the closing spring

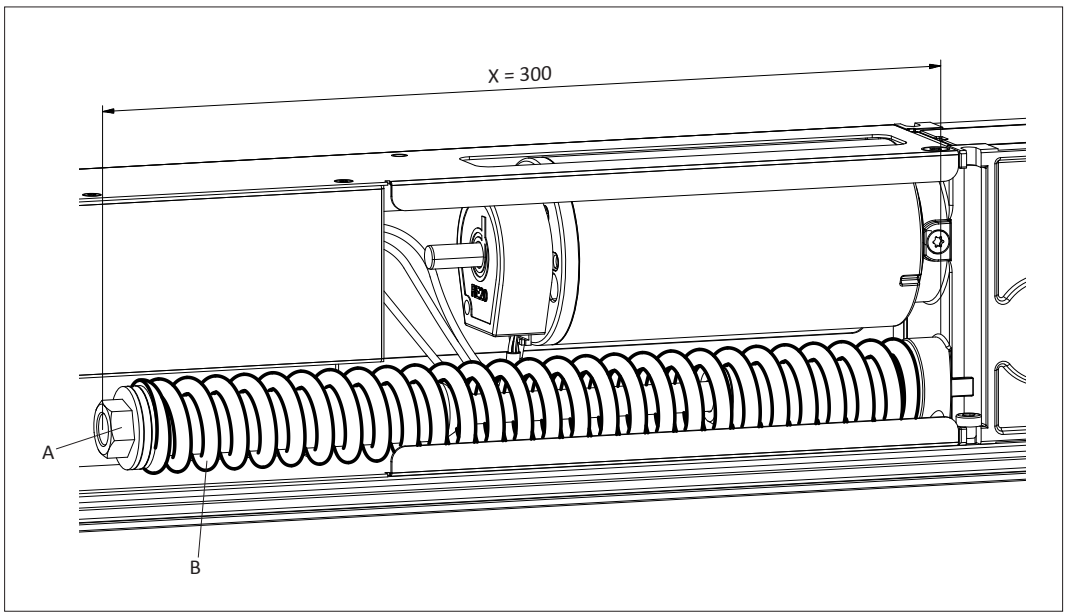
Upon delivery, the closing spring (B) is pre-stressed for a measure X = 300 mm. In exceptional cases, the spring tension (setting X) may be set to between 300 mm and a maximum of 267 mm (without the pre-fitted rod assembly).

Note:
The correct pre-stressing of the closing spring must imperatively be adjusted before carrying out the automatic setting-up procedure! As a general rule, the closing spring (B) force can be reduced when setting the standard drive mechanism.
A possibly existing door lock must be correctly engaged to lock the leaf.
Otherwise: adapt the pre-stressing of the closing spring or the door slam cushioning (potentiometer) accordingly.

Procedure:

1. Close the door leaf.
2. Using the setting screw (A), adjust the measure X in function of the respective situation.
3. Open the door leaf by at least 60° and then let it be closed.

Warning:
The force necessary for manually opening a door must not exceed **150 N**. This effort shall be measured as a static force on the main closing edge (perpendicularly to the door leaf), at a height of 1'000 mm ±10 mm.



4.9 Setting the accelerating function (forceful closing)

While an installation is in the state “without mains power” or in the operating mode MANUAL, the motor acts as an attenuator, thus guaranteeing a constant closing speed until the Closed position is reached.

To make sure that, when switched to the de-energized state or in the operating mode MANUAL, the door leaf is reliably engaged by the door lock, the drive mechanism is equipped with a accelerating function (forceful closing). By means of the potentiometer, the motor cushioning (shortly before the door leaf reaches the closed position) can be adjusted so that the pressure spring will have sufficient power for pushing the door leaf safely into the door lock.

Procedure:

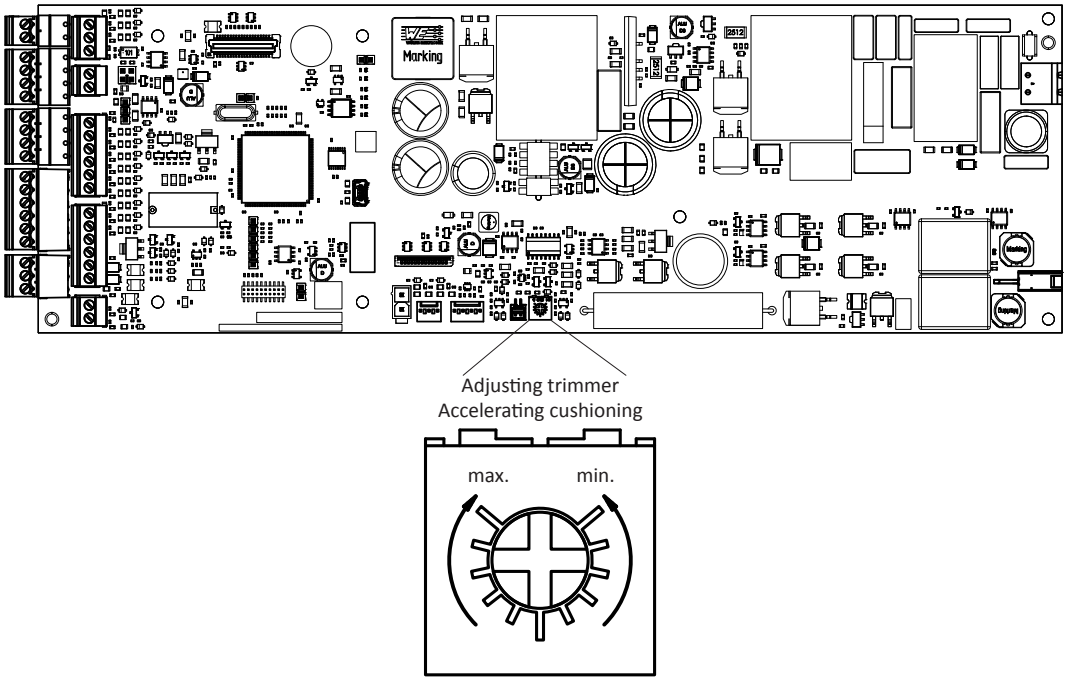
1. Open the door leaf by 90° and then let it be closed.

2. Should the door leaf fail to engage in the lock, set the accelerating cushioning (by means of the potentiometer provided on the control unit).

STOP

Warning:
In de-energized state or in the operating mode MANUAL, the closing procedure must last at least 3 seconds (from the open position 90° up to the closed position 0°).

Control PCB



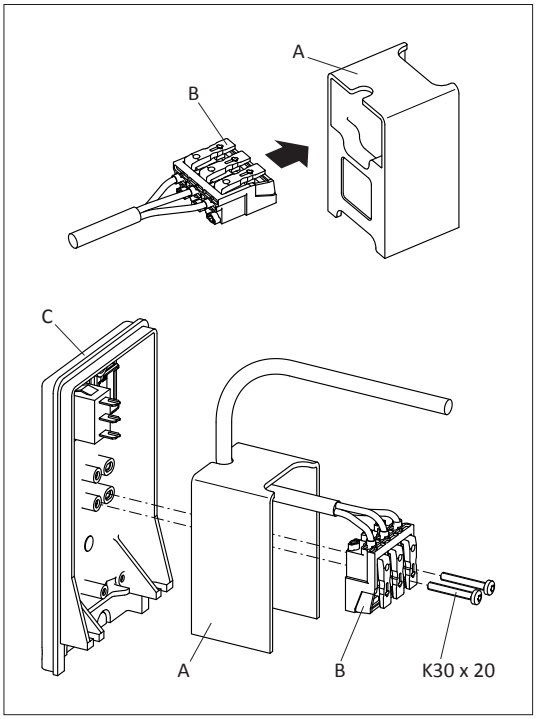
5 ELECTRICAL CONNECTIONS

5.1 Power supply

Warning:
Electric shock hazard! Before working on the drive mechanism, completely disconnect the local mains power supply and block it to prevent accidental or unauthorised reactivation. Ensure also that country-specific regulations are observed. The mains power supply must meet the following requirements: 230 VAC (+10/-15 %), 50 Hz, 10/13 A.

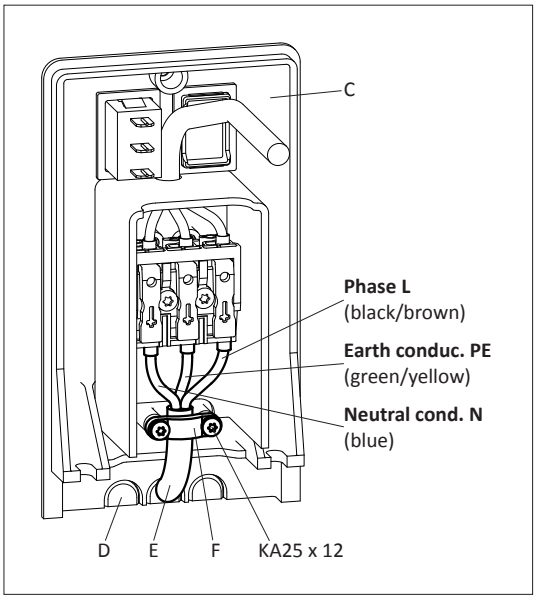
Procedure:

1. Guide the power connection terminal (B) of the drive module through the protection shield (A) and attach on the side cover (C).



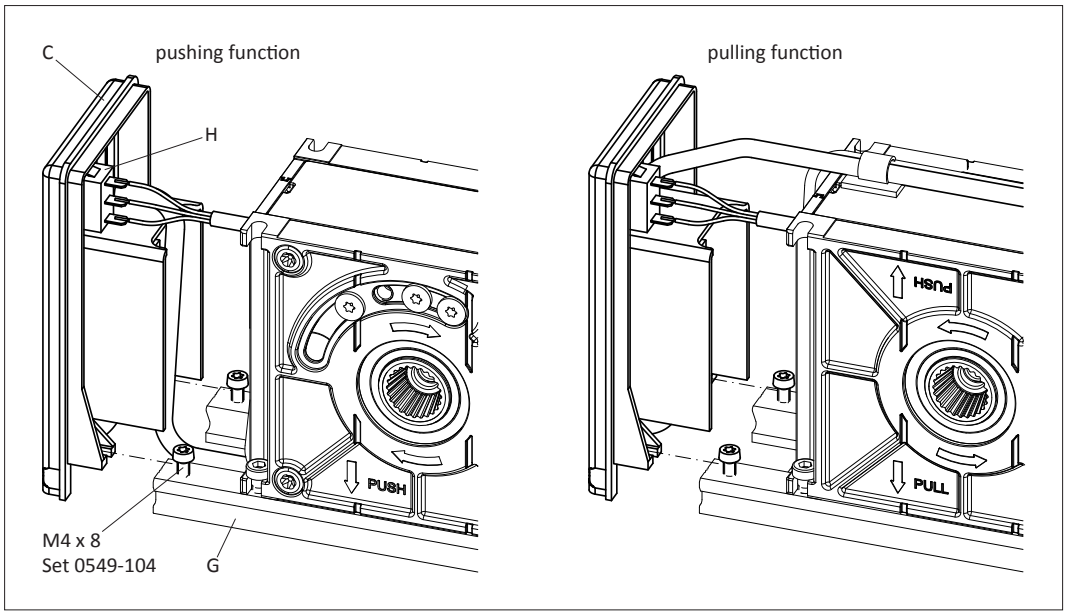
2. If required: Break out the pre-perforated flaps (D) on the side cover (C).

3. Connect the mains cable (E) and fit the strain relief clamp (F).

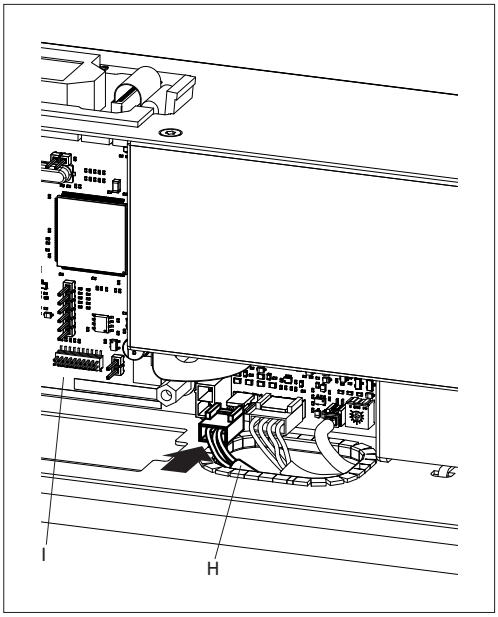


4. Attach both side covers (C) to the chassis profile (G).

Note:
Depending on the assembly situation, it may be advisable to install the program selector switch on the opposite side.



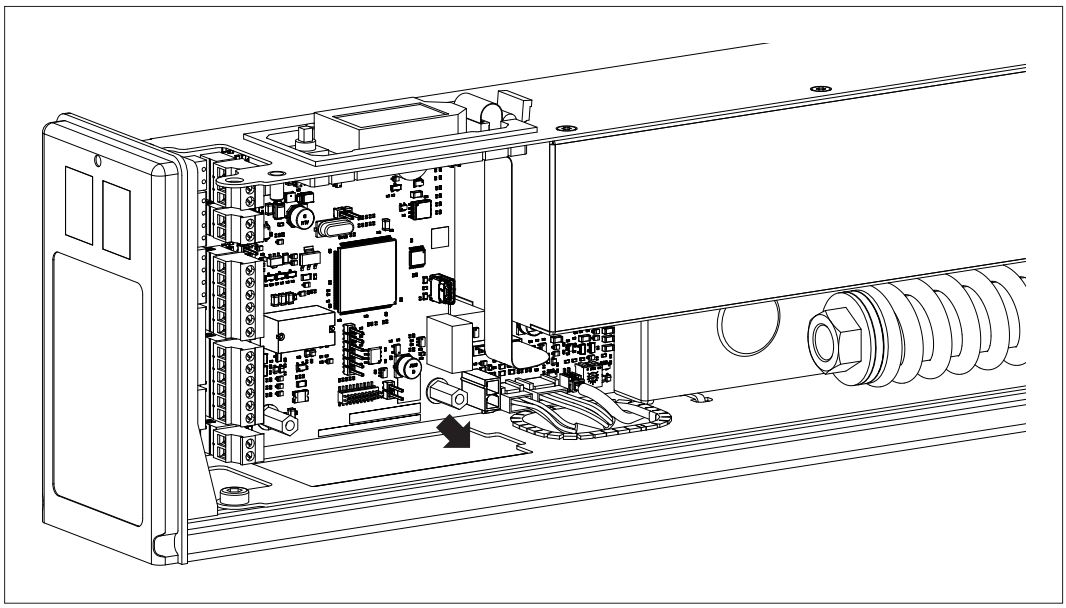
5. Connect the program selector cable (H) to the control unit (I).



5.2 Cable layout

5.2.1 Lintel mounting

Be sure to run the cable between the drive module and the chassis profile wherever possible!



5.3 External elements

1. Mount all the required control and safety elements at their respective place.

2. Lead the cables of the elements up to the drive mechanism (by customers).

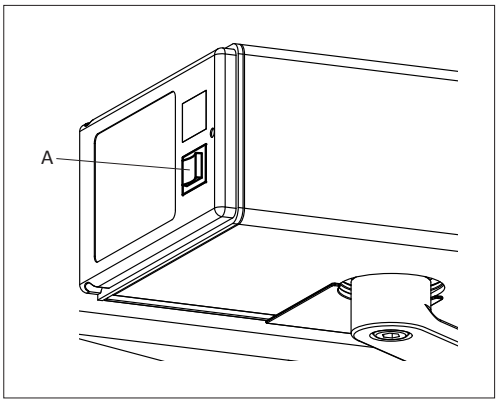
3. Connect the cables according to the diagram E4-0141-724 (in the appendix).

Note:
If an electric lock is provided, its connection rating is 24 VDC and max. 0,5 A (or 24 VAC/1,5 A by customers). It should be designed for a duty cycle of 100 %. The electric lock locks the door leaf in the desired operating modes and is configurable.

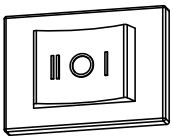
6 CONTROL

6.1 Program selector switch

The drive mechanism is supplied with a built-in program selector switch (A), which allows enabling the operating modes AUTOMATIC, OPEN and MANUAL.



6.2 Operating modes



The following operating modes can be enabled by means of the program selector switch (A):

AUTOMATIC (I)
Automatic opening via the opening elements inside/outside + Key.
Automatic closing upon expiration of the adjustable hold-open time.

MANUAL (0)
The drive mechanism and the control elements are switched off.
The door leaf can be manually opened.
The door leaf is closed by spring power from any position.

OPEN (II)
The door leaf is automatically opened and remains in the OPEN position.

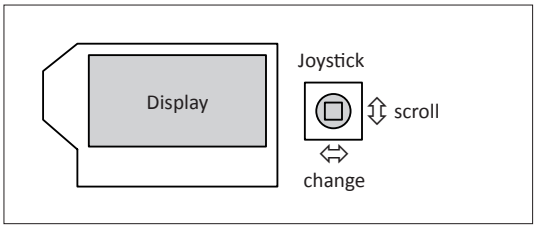
A selector switch can be connected to the corresponding terminals on the control unit for the following operating modes (see circuit diagram in appendix):

NIGHT
The door leaf can only be opened via the opening element Key (key-operated siwtch outside).

EXIT
The door leaf can only be opened via the opening elements inside and Key.

6.3 Display and joystick

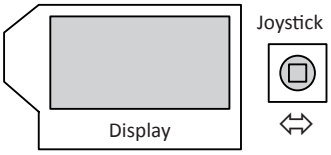
The parameters can be changed on the control unit by means of the display and the joystick.
The movements of the joystick have the following effects:



- Vertical joystick movement (upward/downward) ⇨ Scroll through the displayed information.
- Horizontal joystick movement (to the left/to the right) ⇨ Change the settings.
- Shortly press in the joystick in the rest position ⇨ Validation OK.

7 COMMISSIONING

Warning:
During the setting-up procedure (which must only be carried out by experts), the safety devices (radar, sensors, ...) are switched off!
Before initiating the setting-up procedure, it is important to make sure that neither persons nor objects remain within the danger area of the moving door leaf, in order to avoid injuries or damages!



Procedure:

1. Switch on the drive mechanism on the side cover (Power-up).

2. Using the joystick, adjust the display direction: Move the joystick downward once ⇨ the display direction is switched to a readable position.

Press
Down

3. Programming the type of rod assembly Rod:
Move the joystick to the left/to the right (see parameter chapter 7.1). Validate the correct type of rod assembly by means of OK:
In the rest position, shortly push in the joystick.

Rod
STD-PH

4. Adjust the distance dAxis (distance in cm between the rotation axis of the door hinges and the mounting level of the drive mechanism ⇨ see illustration below).

dAxis
5cm

Note:
dAxis is an approximate value. Depending on the installation situation, dAxis may have to be adapted.

5. Adjust the opening angle Ao and validate by means of OK.

Ao
95°

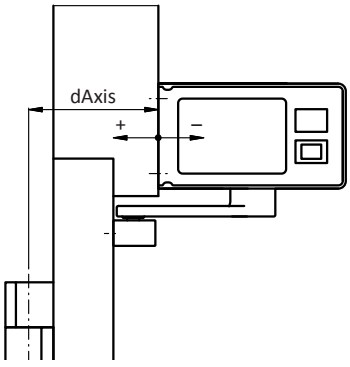
Attention:
The steps 4 and 5 are influenced by the installation measures/ distance between the door hinges.

6. If existing:
Select Low Energy (low energy operation) and confirm with OK.
If you have selected Low Energy: Enter the door leaf width and weight settings and confirm with OK.

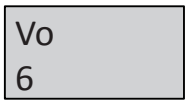
Low En
OFF

Width
85 cm

Weight
75 kg



7. Adjust the opening speed Vo and validate by means of OK.

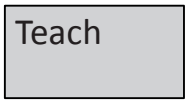


8. Adjust the closing speed Vc and validate by means of OK.

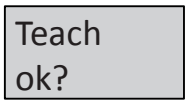
not yet available

9. If desired:
Program the inverse application (spring-powered opening) and validate it by pressing OK.

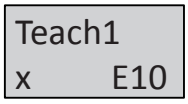
10. Adjust the setting-up procedure (Teach) and validate by means of OK.



11. Start the setting-up procedure (Teach): validate by means of OK.



12. Upon expiry of 10 seconds the setting-up procedure (Teach) is automatically initiated (or immediately by means of moving the joystick ⇦⇧⇨⇩ without OK). During the setting-up procedure the drive mechanism continues to beep. The following learning run is carried out:



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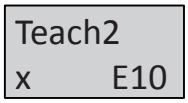
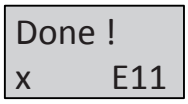
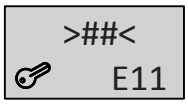


- Inverse: First the system searches for the closed position by moving at super-slow speed.
- Super-slow speed opening direction
- Super-slow speed closing direction.

13. Upon completion of the learning run the following message is displayed:



14. The display should now supply the following information:
E11 indicates that the setting-up procedure (Teach) is not yet completed.



15. By giving an opening command, open the door leaf and let it be closed again. The door leaf will open and close at normal speed (without obstacle detection feature).
Remark:
The door leaf must not be obstructed!
Now the display should provide the following information:
The setting-up procedure (Teach) is now completed.

Note:
A renewed setting-up procedure (Teach) is required if:
- the spring tension has been changed
- the leaf weight has been changed
- the type of rod assembly has been changed
- the opening angle Ao has been changed
- the Teach has been obstructed before reaching an opening angle of 20°
- the distance between axles (dAxis) has been changed

Additional parameter and menu navigation ⇨ see chapter 7.1

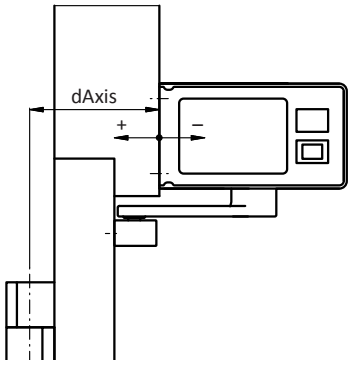
7.1 Adjustings

The parameters can be changed on the control unit by means of the display and the joystick.

7.1.1 Motional parameters (PARAMETER)

Parameter	Description	Setting range	Default
Vo	Opening speed (velocity open)	0...14 (5...40°/s)	6
Vc	Closing speed (velocity close)	0...14 (5...40°/s)	4
TOEx	Hold-open time opening element inside/outside (time hold opening element inside/outside)	0...60 s	3 s
TKey	Hold-open time Key (time hold opening element Key)	0...180 s	5 s
TDelay	Starting delay (time delay lock)	0,0...4,0 s	0,2 s
FDelay	Relieving force during unlocking (force delay) ⇨ only effective if TDelay is > 0	0,0...7,0 A	OFF
TLock	Door rectification time (time press close)	0,0...4,0 s	0,5 s
FLock	Pressing force during locking (force lock) ⇨ only effective if TLock is > 0	0,0...7,0 A	2,0 A
FSlam	Accelerating function (force slam)	0...10	OFF
FWind	Obstacle detection optimized for exterior doors (force wind)	OFF OPEN CLOSE BOTH	OFF
Fo	Opening force (force open)	0...9	4
Fc	Closing force (force close)	0...9	4
Foh	Hold-open force (force open hold)	0...9	0
Fch	Interlocking force (force close hold) ⇨ automatically programs FLock and FDelay if these are 0	0,0...3,5 A	0
LowEN	Low-energy operation TOEx and TKey ⇨ Default 5 s ⇨ can be changed.	OFF BOTH CLOSE OPEN	OFF
Width	Width door leaf in 10 cm steps (only visible if Low Energy = ON)	90...110 cm	100 cm
Weight	Weight door leaf in 50 kg steps (only visible if Low Energy = ON)	50...150 kg	100 kg
Ao	Door leaf opening angle (angle open) If the opening angle is changed during the operating mode OPEN, the operating mode MANUAL needs to be selected for closing the door.	20...(190°) Rod depending	95° *
Rod	Type of rod assembly (Rod) Lintel mounting Normal rods pushing fonction Lintel mounting Sliding rods pulling fonction Lintel mounting Sliding rods pushing fonction Leaf mounting Sliding rods pushing fonction Leaf mounting Sliding rods pulling fonction Leaf mounting Normal rods pulling fonction	STD-PH SLI-PL SLI-PH WIN-PH WIN-PL WIN-ST	STD-PH *
Invers	Inverse application In the event of a power failure/error, the door leaf is opened by spring power from any position (unless it has not been locked).	OFF ON	OFF *
dAxis	Distance between rotation axis of the door hinges and the mounting level of the drive mechanism (distance Axis). dAxis is an approximate value. Depending on the installation situation, dAxis may have to be adapted.	-8...+25 cm Rod depending	0/+8 cm Rod dep. *
FTic	Closing force in closed position before Teach (only visible if Inverse is ON)	5...14 A	5 A

not yet available



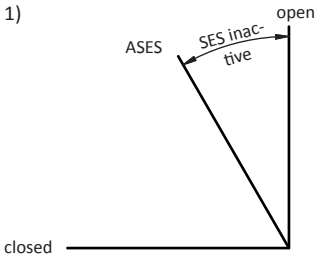
* Note:
A renewed setting-up procedure (Teach) is required.

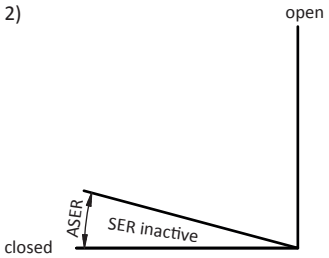
7.1.2 Configuration (CONFIG)

Parameter	Description	Setting range	Default
Servo	Support for manual push to open. The key opens automatically. Five-position adjustment, depending on the width and weight of the door leaf.	OFF 1...5	OFF
APuGo	Triggering angle Push&Go (angle push&go)	OFF, 2...10°	OFF
ASES	1) Suppression point Safety Element stop (angle safety element stop). If Ao is changed, ASES is auomatically set to Ao.	45°...Ao	95° Ao depending (95°)
ASER	2) Suppression range of the safety element reversing (angle safety element reversing)	0...60°	0°
SeOpCo	Persistent opening (saferty element open continue). After a Safety Element Stop during the opening procedure, the door shall continue its opening move (instead of closing), as soon as SES is activated.	OFF ON	OFF
SeOpTi	Waiting time till the drive mechanism closes even if SeOpCo = ON (saferty element opening time), in the event that a fixed object blocks the door (only visible if SeOpCo = ON).	PERMAN 1...60 s	20 s
SESClo	Safety element Stop activated/deactivated during the closing motion (safety element stop closing)	ACTIVE INACTI	INACTI
EMY-IN	Configuration of the Emergency terminal (break contact) (emergency input)	CL-SPR (spring) STOP OPEN CL-MOT (motor)	CL-SPR
OExStp	Step-by-step control function (opening element step)	OFF OEI OEO KEY RADIO	OFF
RC 0.1	Parametrizable relay output 1 on optional PCB 1 (relay contact) (only visible if relay PCB 0 is plugged in)	CLOSED OPENING OPEN CLOSING ERROR PSAUTO PSNIGHT PSEXIT PSOPEN PSMANU GONG LOCKED SIX30S EMY_AL	CLOSED
RC 0.2	Parametrizable relay output 2 on optional PCB 1 (relay contact) (only visible if relay PCB 0 is plugged in)		OPEN
RC 0.3	Parametrizable relay output 3 on optional PCB 1 (relay contact) (only visible if relay PCB 0 is plugged in)		ERROR
RC 0.4	Parametrizable relay output 4 on optional PCB 1 (relay contact) (only visible if relay PCB 0 is plugged in)		GONG
RC 1.1	Parametrizable relay output 1 on optional PCB 2 (relay contact) (only visible if relay PCB 1 is plugged in)		OPENING
RC 1.2	Parametrizable relay output 2 on optional PCB 2 (relay contact) (only visible if relay PCB 1 is plugged in)		CLOSING
RC 1.3	Parametrizable relay output 3 on optional PCB 2 (relay contact) (only visible if relay PCB 1 is plugged in)		PSAUTO
RC 1.4	Parametrizable relay output 4 on optional PCB 2 (relay contact) (only visible if relay PCB 1 is plugged in)		LOCKED
Unlock	Impulse/Permanent unlocking (impulse unlock)	IMPULS PERMAN	IMPULS
UnloCl	Engage (unlock) and secure the motorised lock before closing, if the door leaf is to be closed.	INACTI PERMAN	INACTI
EL-Fb	Return signal of the electric lock (electric lock feed back) N.O. ⇨ Contact open if in the unlocked state (-), .closed if iin the locked state (+) N.C. ⇨ Contact open in the locked state (+), closed in the unlocked state (-) (+) and (-) indicate the status in the diagnostic menu.	OFF N.O. N.C.	OFF
LockAU	Operating mode AUTOMATIC locked (locked automat) (only visible if Unlock = Perman)	UNLOCK LOCK	UNLOCK
LockEX	Operating mode EXIT locked (locked exit) (only visible if Unlock = Perman)	UNLOCK LOCK	LOCK
LockMA	Operating mode MANUAL locked (locked manual) (only visible if Unlock = Perman)	UNLOCK LOCK	UNLOCK
LcdDir	Orientation of the display (LCD direction)	0...1	0

not yet available

MovCon	Endurance test Open/Close (moving continuous)	OFF ON-FLT ON-PRM	OFF
OExMAN	Acceptance of opening commands after a manual door opening (only if APuGo = OFF) (opening element inside/outside manual)	OFF ON	OFF
OEOSIR	Safety device on opposite side to door hinge as opening element. Note: This parameter must be set to OFF for teaching-in of the LZR-FLATSCAN.	OFF ON	OFF
PSKIZe	Zero position of the program setting (operating mode); fixed program position that can only be changed by means of the terminals on the control unit (program selector key in the side cover inactive). Use for external program switch (only four terminals) or for controlling the program positions via the terminals on the control unit. (program selection terminal zero)	No Act PSOpen PSHand PSAuto PSExit PSNigt	No Act
SCBloc	Lock the program selector key in the side cover (side cover block) Toggle = Lock/unlock (press active program key during at least 5 seconds). Time = Lock (automatically after 5 minutes without any activation of the program keys), unlocking (press active program key during at least 5 seconds).	OFF Toggle Time	OFF
Buzzer	The buzzer signals the door leaf movement (persons with amblyopia/without hindrance)	OFF BOTH OPEN CLOSE	OFF

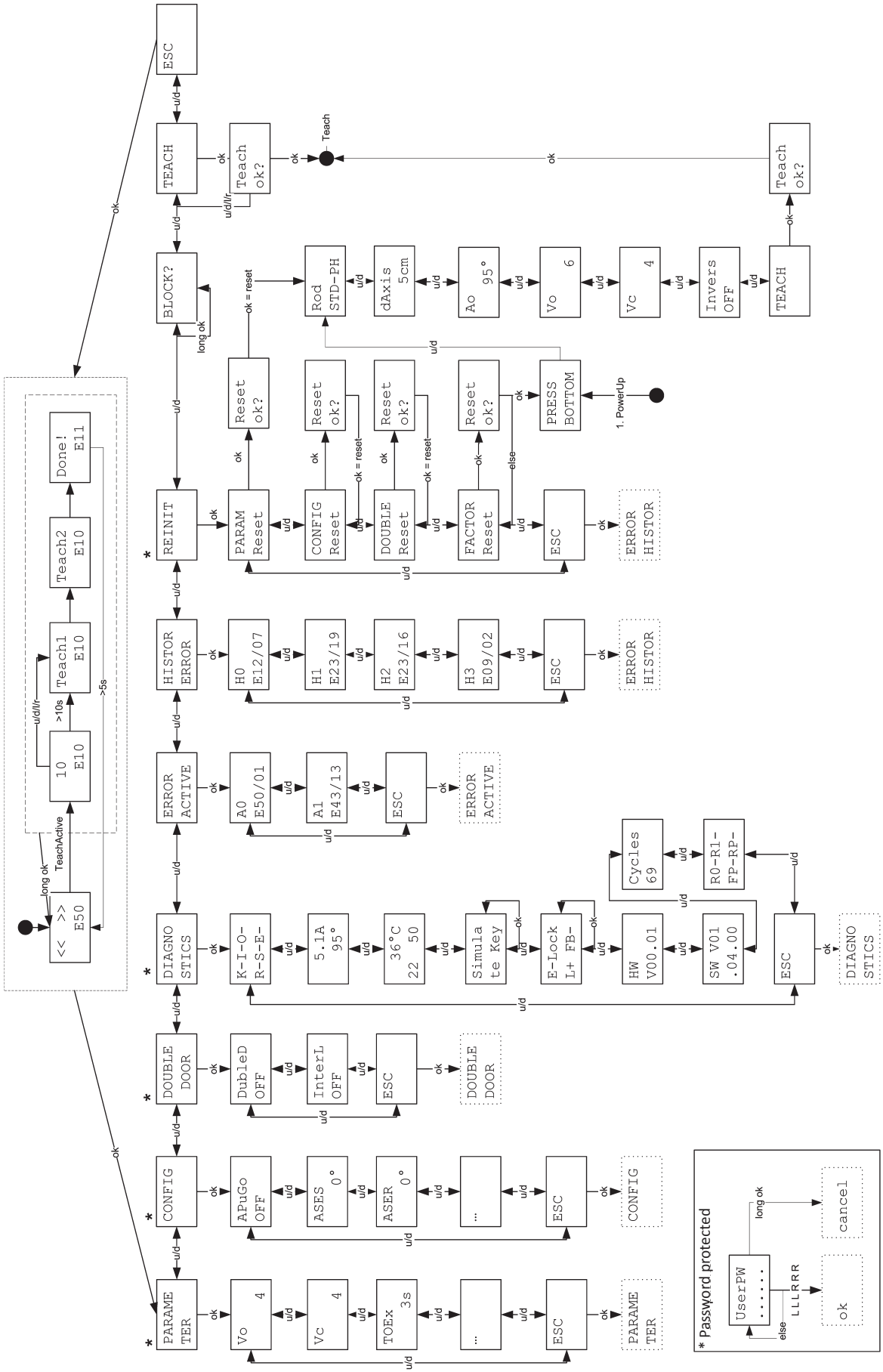




7.1.3 Installations with multiple door leaves (DOUBLE DOOR)

Parameter	Description	Setting range	Default
DubleD	Closing sequence role (Master/Slave) and interlock side (A/B)	OFF MastrA SlaveA BastrB SlaveB	OFF
AoSeq	Current delay angle for opening sequence control (Slave) (only visible if DubleD is active)	0...110°	20°
AcSeq	Current delay angle for closing sequence control (Master) (only visible if DubleD is active)	0...110°	20°
InterL	Interlock	OFF SideA SideB	OFF
ILAuto	Interlock mode Operating mode AUTOMATIC (only visible if InterL is active)	Inacti Active	Active
ILExit	Interlock mode Operating mode EXIT (only visible if InterL is active)	Inacti Active	Active
ILNigt	Interlock mode Operating mode NIGHT (only visible if InterL is active)	Inacti Active	Active
ILType	Safety The two doors function as an interlock (in all operating modes). The second door only opens when the first one is closed. This applies to both doors. Spital Automatic sequence ⇨ whenever a door opening command is issued, the door receiving the command is opened. Once it has closed again, the second door opens automatically. NL The second door only opens when the first one is closed, or after the override period has elapsed.	Safety Spital NL	Safety
TOverd	Only visible in ILType NL When the override period has elapsed, the interlock function is cancelled. Once both doors are closed, the interlock function is activated.	OFF 1...60 s	OFF
RdrOEI	OFF OEO/OEI radar function activates normally. The door closes if both are inactive. ON The OEO deactivates the (OEI) radar inside smaller interlocks to prevent it from keeping the door open.	OFF ON	OFF
ILCdRc	Active Open commands are temporarily stored, and then carried out as soon as the second door is closed. Inactive Open commands are not carried out until the second door is closed.	Active Inacti	Active

7.1.4 Menu navigation

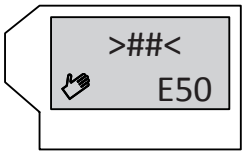


On the **1st level**, the following information is shown on the display:

1st display line:
The door position is represented by means of the arrows (><). Alternatively, the motion-relevant opening and safety signals are displayed. The double hash signs (##) indicate that the door is locked. In the open position the hold-open time is shown in the form of a countdown.

Display of the door position:

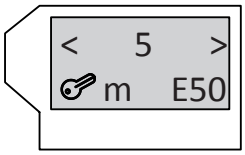
<REF?>	Waits for reference switch
< ?? >	Unknown
><	Closed
>##<	Closed and locked
<< >>	Opening
< >	Open
>> <<	Closing
==	Stopping

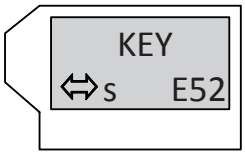


Display of the door control:

OEO	Opening element outside
OEI	Opening element inside
KEY	Opening element NIGHT
SES	Safety element Stop
SER	Safety element Reversing
SEF	Safety element Force (obstacle detection)
EMY	Emergency element
PUGO	Push-and-Go

2nd display line:
- at the bottom, left-hand side, the presently enabled operating mode is displayed (a frame around the symbol indicates the overriding operating mode).
- (m) means closing sequence - Master
- (s) means closing sequence - Slave
- (w) means interlock
- at the bottom, right-hand side, the presently active errors are displayed.





By means of OK you can switch over from the first to the second level.

For all the menus of the following list, exiting is possible by remaining on the OK key, or by means of the menu item ESC.

On the **2nd level**, the following menus are available:

PARAMETER
Setting the motional parameters
- A changed parameter value is shown by a flashing display. Press OK in order to validate the change.

CONFIG
Setting the functionalities
- A changed parameter value is shown by a flashing display. Press OK in order to validate the change.

DOUBLE DOOR
Setting the closing sequence and interlock function
- A changed parameter value is indicated by a flashing display. In order to validate the change, OK must be pressed.

DIAGNOSTICS
Diagnostic tools
- K-I-O-R-S-E shows the inputs KEY (K), OEI (I), OEO (O), SER (R), SES (S), EMY (E). (+) stands for active, (-) for inactive.
- 5.1A 95° shows the motor current and the door opening angle.
- Simulate Key: OK triggers a Key command.
- E-Lock: L- shows the status of Lock (L). FB- shows the input El-Fb. OK actuates the electric lock. L+ resp. FB+ means locked. L- resp. FB- means unlocked.
- HW Version: Version of the Logic PCB.
- SW Version: Version of the Software.
- Cycles: Total number of openings (this value is memorized).

Optional PCBs ⇨ see chapter 13.5.

ERROR ACTIVE
Pending active errors
- The pending active errors are displayed in a list. This list is updated at the end and the latest additions appear during the next passage. A0 indicates the latest error that has occurred.
- Exit the list by pressing OK.

HISTOR ERROR
Formerly active errors
- H0 indicates the latest error that has occurred.

REINIT
Carry out a re-initialization
- PARAM Reset sets all the motional parameters back to the default values (inclusive opening angle, rod assemblies and dAxis).
- CONFIG Reset sets all the configuration settings back to the default values.
- DOUBLE Reset sets all the closing sequence and interlock settings back to the default values.
- FACTOR Reset
  The control unit is reset to the delivery configuration programmed by the manufacturer. This means that all the motional parameters, configurations, closing sequence and interlock settings are reinitialized with the default settings.
- Reset OK? is validated by means of OK and aborted by any other joystick movement.

BLOCK/UNBLOC
Lock/unlock the joystick
- BLOCK
  Lock the joystick. For a temporary unlocking, press OK for more than 1 second.
  60 seconds after the last joystick actuation, the joystick is automatically relocked.
- UNBLOC
  Permanent unlocking of the joystick.

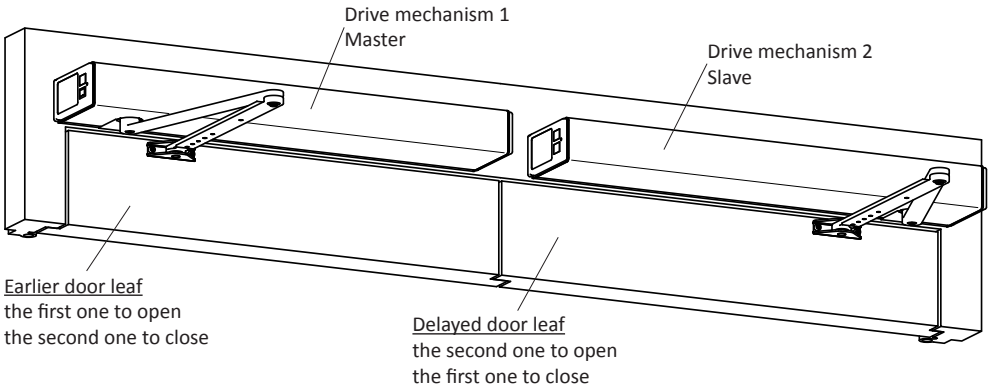
UPDATE SW
Carry out a Software-Update

TEACH
Completely close the door leaf. Initiate a setting-up procedure (during the setting-up procedure the drive mechanism continues to beep).
- Teach OK? is validated by means of OK and aborted by any other joystick movement.
- The setting-up procedure can be canceled by means of the D-BEDIX (C-key).

Setting of the opening angle (Ao): During the first setting-up run, the drive mechanism moves to the open position (Ao) or up to the recommended open position stop piece, whichever event happens first, and the obtained result is memorized as opening angle. In the event of an excessively big difference between the actual opening angle and the displayed angle (in the diagnostic menu), this angle can be corrected (by means of dAxis). If the difference persists, the installation precision should be checked.

7.2 Closing sequence control

For bi-parting installations, the closing sequence control determines the order in which the door leaves are opened and closed. For the opening procedure, the earlier door leaf (Master leaf) is the first one to be opened, whereas for the closing procedure the delayed door leaf (Slave leaf) is the first one to be closed. This sequence ensures a correct overlapping of the door leaves.



Connections:

Opening elements (KE, OEO and OEI) connected to Master only act upon the Master (single leaf operation). Opening elements connected to Slave act upon the Master as well as on the Slave (bi-parting operation).

The safety elements SER and SES are connected to the respective drive mechanism.

An active EMCY element connected to the Master carries out the EMY-IN action configured on the Master (for both door leaves). An active EMCY element connected to the Slave switches the latter to the spring-powered operation.

An electric lock, which locks the Master leaf, is connected to the Master. Accordingly, an electric lock, which locks the Slave leaf, is connected on the Slave.

Function:

The first door leaf to be put in motion for the opening procedure is the Master; by means of DubleD, this leaf is configured as MastrA. Its partner is the Slave, which is configured as SlaveA by means of DubleD.

In the event of an existing connection, the Master is identified by a small black (m) and the Slave by a small black (s). If however there is no connection, this is indicated by a small white (m) respectively a small white (s).

The parameter settings for the Master and the Slaves are entirely independent from each other. It is thus possible to select a Vo = 4 for the Master and a Vo = 5 for the Slave.

In order to guarantee a collision-free opening of both door leaves, the Slave leaf lets the Master leaf go ahead and initiate the opening. This time lag can be defined on the Slave by means of AoSeq. The default value of AoSeq is 20°, which is sufficient for most of the bi-parting installations. This means that the Slave only starts to open after the Master has exceeded an opening angle of 20°.
From then on, it is admissible for the Slave to catch up with and pass the Master if this should be required. This is done by configuring a higher Vo value for the Slave than the one for the Master.
In cases where (due to an electric lock connected to the Master) TDelay of the Master is configured with a higher value than 0,0 s, then the angle between the Slave and the Master is accordingly increased. To compensate this, AoSeq can be reduced in accordance.
An AoSeq value of 0° means that both door leaves will be simultaneously opened, i.e. that no opening delay is active.

The default value of AcSeq is 20° and thus sufficient for the majority of bi-parting installations. In cases where a mechanical closing sequence regulator is used with a mechanical closing delay of e.g. 90°, AcSeq must be programmed with a value of 90° or more.
AcSeq 20° means: The Master only starts closing as soon as the Slave has gained a lead of 20°. This advance guarantees that the Master will be closed in one go (without intermittence), which results in an optically pleasing closing motion.
The Master is allowed to overtake the Slave. 20° (value AcSeq) before reaching the closed position, the Master checks whether the Slave is already closed. If not, the Master will perform an intermediate stop in order to prevent a collision.

An active SES signal on a door leaf causes a safety stop of both door leaves. The same applies for the SER signal. An active SER signal causes both door leaves to reverse their motion.

A bi-parting installation can be operated in the single-leaf mode. An active EMCY signal on the Slave programs the closing sequence as a single-leaf configuration.
If only the EMCY signal on the Master is active, then this EMCY signal is applicable for both door leaves. In accordance with the action configured on the Master by means of EMY-IN, both door leaves carry out a CL-SPR (Close Spring), STOP, OPEN or CL-MOT (Close Motor).
If only the EMCY signal on the Slave is active, then the Slave carries out a CL-SPR, regardless of the action configured on the Slave by means of EMY-IN.
If both EMCY signals are active, then the Master performs its configured EMY-IN action and the Slave performs a CL-SPR. One exception of this rule is the Master in the EMY-IN configuration OPEN. In this case, both door leaves will be opened.

Procedure:

1. Connect both control units by means of the three-pole cable (terminal X109, CG/CL/CH).

Note:
The respective control and safety elements are connected to the corresponding drive mechanism.

2. Take the Master drive mechanism into operation (see chapter 7).

3. For the Master drive mechanism: Select the operating mode OPEN.

4. Take the Slave drive mechanism into operation (see chapter 7).

5. Configuration of the Master drive mechanism:
   - DubleD = MastA
   - AcSeq = desired time lag of the closing angle.

Note:
In cases where a mechanical closing sequence regulator is used, start with a AcSeq of 90°; afterwards AcSeq can be reduced.

6. Configuration of the Slave drive mechanism:
   - DubleD = SlaveA
   - AoSeq = desired time lag of the opening angle.

Control:

1. Check the display of the Master control unit to see if a small black (m) is visible on the first level (connection existing). On the display of the Slave control unit, a small black (s) must be visible.

Note:
A small white (m) resp. (s) indicates: missing connection.

2. Transmit a Key command to the Slave drive mechanism:
   - The Master-drive mechanism is the first one to open, followed by the Slave drive mechanism (which is delayed by the value of the opening angle).
   - In the open position the hold-open time expires on the display of the Slave control unit.
   - The Slave drive mechanism is the first one to close, followed by the Master drive mechanism which is delayed by the value of the closing angle).

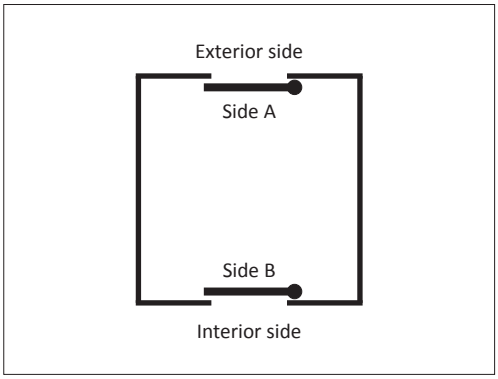
Parameters:

Note:
See chapter 7.

7.3 Interlock operation

Procedure:

Note:
Both installations must be plugged into resp. out of the same power supply.



1. Connect both control units by means of the three-pole cable (terminal X109, CG/CL/CH).

2. Normal commissioning of both drive mechanisms.

3. Configuration of the drive mechanism for the exterior door (A):
   • InterL = SideA

4. Configuration of the drive mechanism for the interior door (B):
   • InterL = SideB

Control:

1. Check the display of the Master control unit to see if a small black (w) is visible on the first level (connection existing).

Note:
A small white (w) indicates: Missing connection.

2. Transmit a Key command to the exterior door (A):
   • On the display a big black (W) appears (door is not closed).
   • While the exterior door (A) is open, transmit a Key command to the interior door (B) (the latter must not be opened).

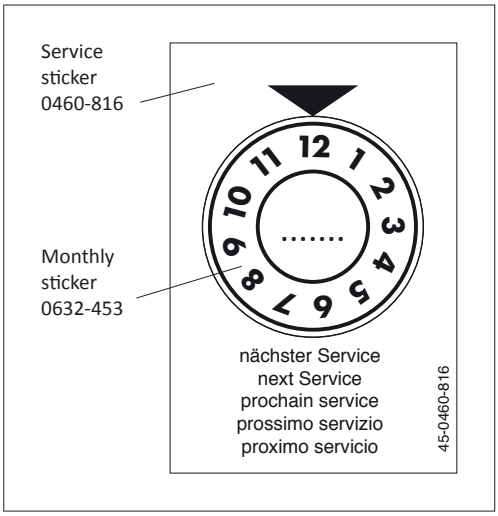
3. Transmit a Key command to the interior door (B):
   • On the display a big black (W) appears (door is not closed).
   • While the interior door (B) is in the open position, transmit a Key command to the exterior (A) (the latter must not be opened).

Note:
The parameters ILAuto, ILExit and ILNigt enable you to configure the operating modes in which the interlock system shall be active.

7.4 Adhesive labels

7.4.1 Service sticker

1. Attach the service sticker (outside) onto the degreased surface of the drive mechanism covering, at a place that is easily visible for the customer.
2. Stick the monthly sticker onto the service sticker, turning the monthly sticker until the checking date matches the arrow.
3. Using a water-proof felt tip pen, enter the year of the next checkup on the monthly sticker.



7.4.2 Arrow sticker

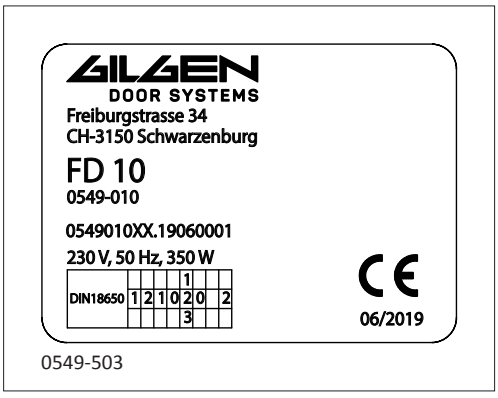
1. For transparent door leaves or door leaf surfaces:
   Attach arrow sticker onto the degreased surface of the door leaves (inside, at eye level).

7.4.3 Glass sticker

1. Attach the glass sticker onto the degreased surface of the door leaves (outside at the bottom, near the closing edge).

7.4.4 Rating plate

1. Attach the rating plate (outside) onto the degreased surface of the drive mechanism covering, at a place that is easily visible.



7.5 Mount the drive mechanism covering

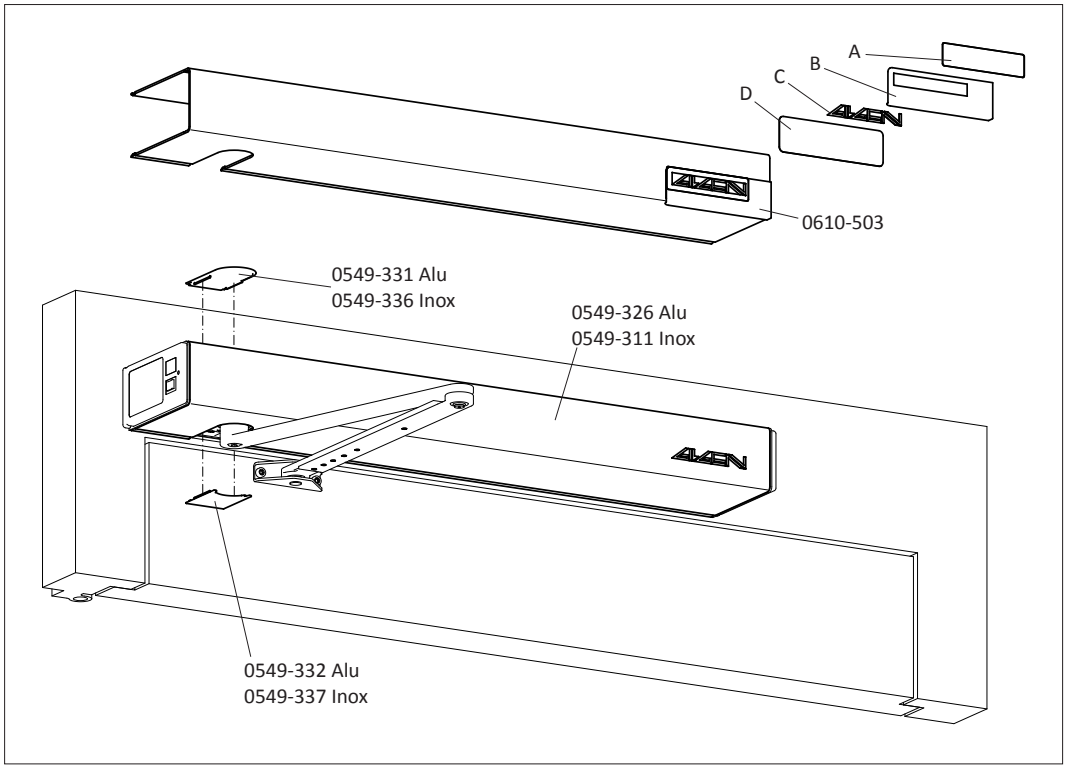
Material:

1	Covering	0549-326	Aluminium
1	Covering accessories	0549-105	Aluminium
1	Gilgen-Logo	0610-503	Set 0549-997/01
or			
1	Covering	0549-311	Stainless steel
1	Covering accessories	0549-109	Stainless steel
1	Gilgen-Logo	0610-503	Set 0549-997/01

Procedure:

1. Attach the Gilgen Logo:
   a) Degrease the gluing surface on the covering.
   b) Remove the white cover sheeting of the sticker (D).
   c) Position the template (B) with the logo (C) in the lower right-hand corner of the covering and tightly press on the logo (C).
   d) Remove the transparent protective foil (A).
   e) Remove the template (B).

2. Mount the covering and the accessories as shown in the illustration.



8 SERVICE

A regular service (maintenance/checking) is absolutely indispensable in order to guarantee a safe operation and long lifetime of the installation. The service must be carried out by a expert, **at least once a year**, according to the following checklist.

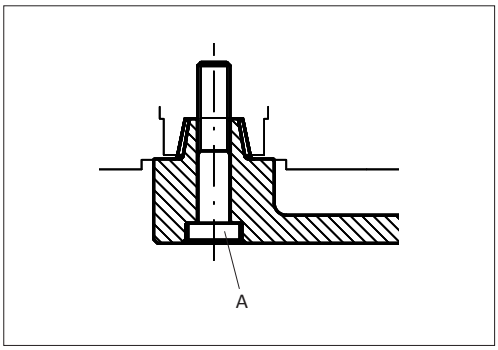
This checkup work basically refers to visual and functional checking destined to evaluate the integrality, the condition and the efficiency of the components and safety devices (checking of the different elements as far as these are included in the installation).

Warning:
To avoid jeopardizing the safety of persons, any defective safety elements may not be disonnected in order to continue the operation of the installation!

Attention:
In order to guarantee the availability of the installation, any elements showing signs of wear must be replaced as a preventive measure!

Note:
- Every service which has been carried out shall be entered into the control booklet!
- The following service description refers to the basic components. The options are described in detail in chapter "Options".

Attention:
If the fastening screw (A) of the rotating arm is released, this screw must be secured upon tightening by means of Loctite 243, or else a new original screw needs to be inserted (see chapter: Spare parts).



8.1 Service for pedestrian doors

Warning:
Electrocution hazard! Before working on any live elements, pull out the mains plug as well as any existing plug of the emergency battery respectively switch off the main installation switch!

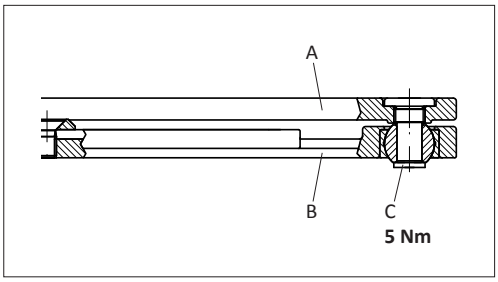
	Check	Clean[2]	Grease	Adjust
Installation				
General condition	x			
Free door movement (manually)	x			x
Door guides/Bottom guide rail	x	x		x
Door sealing joints	x	x		x
Sliding door leaves/Side panels/Protection leaves	x	x		
Coverings/hinge-type covers	x	x		
Tight fitting of screws and nuts	x			
Drive mechanism				
Drive mechanism	x	x		x
Transmission elements such as: Toothed belts, flat belts, cables, rods or chains	x	x		x
Running carriages with carrying pulleys and counter-pressure pulleys	x	x		x
Carrier rails	x	x	x	
Open/Closed position	x			x
Control elements				
All the existing control elements such as: Detectors, radars, key-operated switches, contact carpets, etc.	x	x		x
Control unit				
Electrical connections	x			
Functions related to installation	x			x
Program switch functions	x			
Emergency battery	x			
Escape way doors				
Emergency opening with mains failure[1]	x			
Opening speed 80 % in 3 seconds[1]	x			x
Activation escape way detector 1,5 m in front of the door[1]	x			x
Minimum escape way width[1]	x			x
Maximum opening force at Break-Out leaf 220 N (1 m from floor)	x			x
Safety elements				
Reversing/stopping mechanism	x	x		x
Door locking/Manual unlocking mechanism	x	x	x	x
Rubber cable	x			x
Monitoring switch	x	x		x
Light barrier/Presence detector	x	x		x
Safety according EN16005				
Protections against impact				
Protections against crushing				
Protections against getting caught in				
Protections against shearing				
Protections against imprisoning				
Safety deficiencies must be communicated to the operator (in writing)!				
Miscellaneous				
Rating plate, arrow sticker, glass sticker, etc. existing?				
Control booklet existing and completed?				

[1] Only for redundant drive mechanisms.
[2] Gilgen cleans all the elements of the installation provided this is necessary for the function of the installation. A general cleaning of the installation is not planned.

8.2 Fundamental checking

Warning:
Electrocution hazard! Before working on any live elements, pull out the mains plug respectively switch off the main installation switch!

1. Dismount the covering of the drive mechanism.
2. Check all the cable connections.
3. Normal rods:
   Separate the rotating arm (A) from the rod arm (B) by loosen the screw (C).
4. Check the free running movement of the door leaf.
5. Check the bearings of the drive mechanism for increased noise level.



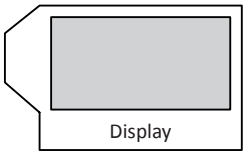
6. Normal rods:
   Fasten the rotating arm (A), by means of the screw (C) to the rod arm (B) ⇨ Tightening moment **5 Nm**.
7. Mount the covering of the drive mechanism.

9 TROUBLESHOOTING

Warning:
Electric shock hazard! Before working on any live elements, pull out the mains plug respectively switch off the main installation switch!
If a malfunction occurs which might be detrimental to the safety of the users, and which cannot be eliminated without delay, the operator must be informed and if required the installation shall be taken out of operation. The installation must be repaired as soon as possible.

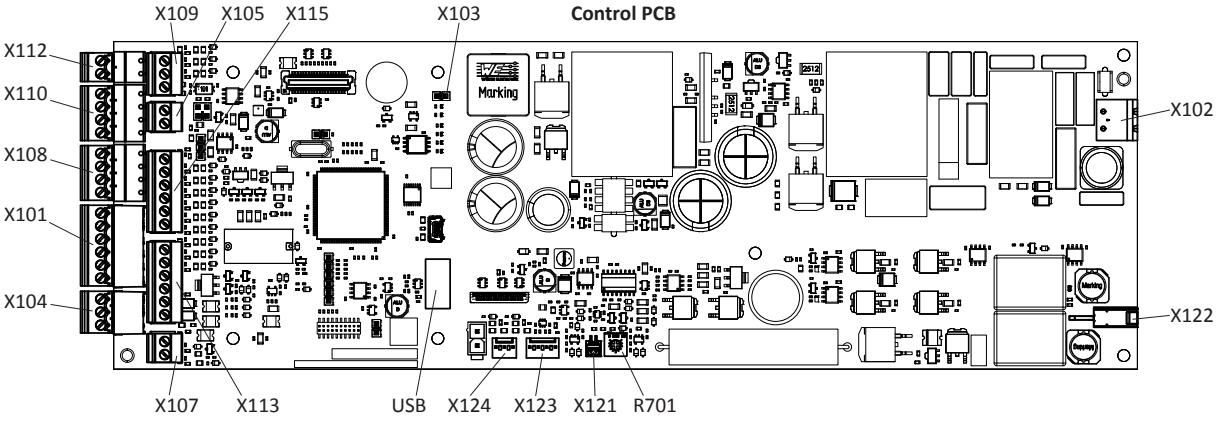
Note:
Every troubleshooting procedure which is carried out must be entered into the control booklet!

9.1 Malfunction with error-no.



The error is indicated on the display of the control unit.

Definition of the column "Reaction".
- A The drive mechanism deactivates itself during a certain period. Manual operating mode or stopping position.
- F Fatal error
- H Manual operating mode with re-starting attempt
- W Warning



9.1.1 Drive mechanism

No.		Description	Cause	Elimination	Checking time	Reaction
E1	03	Encoder	Channels A + B lost	Check the encoder connection. Check the motor cable. The door is blocked. Check if a jumper has been inserted on X103.	During run.	H
	04		Short-circuit A + B			
	05		Dysfunctions			
	06		Motor cable uncorrect plugged in		Prior to start-up.	H
	07		No channel A			
	08		No channel B			
	09		No channel A + B			
	10		Short-circuit A + B			
E2	01	Motor current	Current too high	Check the motor cable. Check if a jumper has been inserted on X103.	Prior to start-up.	H
	02		Current too low Jumper missing			
E3	01	Cushioning	Test failed once	Switch the drive mechanism to the MANUAL operating mode and carefully check if the door closes in a cushioned manner. If not: replace the hardware. If yes: check/correct the friction of the door leaf and the pre-stressing of the closing spring.	Prior to the closing motion, after start-up, and subsequently every 24 h.	W
	02		Test failed twice. Damping defective.			F Drive unit is functionning. Buzzer actif.
E4	01	Reference switch	Detected in the open position.	Check the connection and the switching point of the reference switch. The reference switch must be activated in the closed position (switching contact open).	Open position.	F
	02		Not detected in the closed position.		Prior to the first setting-up run.	A
	03		Not detected in open position.			
E5	00	Power limitation	Overload of the control. the maximum power is restricted.	Check/correct the friction of the door leaf and the pre-stressing of the closing spring.	Permanent.	A

9.1.2 Operating

No.		Description	Cause	Elimination	Checking time	Reaction
E10	01	Fullteach required	Parameter Ao, Rod or dAxis changed.	Carry out a teach.	Upon changing the drive mechanism configuration.	H
	02		Minimum opening angle has not been reached.	Check the locking/electric lock.	During Teach.	H
E11	01	Halfteach required (Opening)	Parameter Vo changed.	Carry out a complete and unhindered opening cycle.	Upon changing the motional parameters.	W
	02	Halfteach required (Closing)	Parameter Vc or FSlam changed.	Carry out a complete and unhindered closing cycle.		
E12	03	Excessively high current consumption during Teach in the open position (> 5 A)	Drive unit pushes against the open position stop piece or an obstacle. The spring tension is possibly too high.	Reduce the opening angle Ao. Reduce the spring tension.	Open position Teach 3 (E11).	F
E14	01	Locking/electric lock	The door leaf got caught in the locking/electric lock. Feedback: the electric lock ELFb does not switch.	Check the function of the locking/electric lock. Feedback: check the electric lock ELFb.	When opening from a closed position.	H
	02		The interlocking force Fch has not been programmed.	Program/increase the interlocking force Fch.	At the end of the teach-in procedure.	W
E15	01	Obstacle in opening direction	Too many successive obstacles have occured.	Examine the installation. Remove the obstacle. Move the door leaf to the target position.	Permanent.	H, A Restart after 60 s.
	02	Obstacle in closing direction				

9.1.3 Safety elements

No.		Description	Cause	Elimination	Checking time	Reaction
E20	01	SER Test	SER Test signal unsuccessful.	SER short-circuit to the earth. Check the cabling of the sensor or the jumper.	Prior to closing.	A
	02		SER too slow.	SER reacts too slowly. Check the cabling of the sensor. Check for polarity reversal/test signal.		
E21	01	SES Test	SES Test signal unsuccessful.	SES short-circuit to the earth. Check the cabling of the sensor or the jumper.	Prior to opening.	A
	02		SES too slow.	SES reacts too slowly. Check the cabling of the sensor. Check for polarity reversal/test signal.		
E22	01	EMY Test	EMY input on 24 V.	Check the jumper EMY. Check the cabling of EMY.	Permanent.	H

9.1.4 Feeding

No.		Description	Cause	Elimination	Checking time	Reaction
E30	01	30 V Error	30 V too low.	Mains failure, overload motor. Check the feed-in. Replace the hardware.	Permanent.	A
	02		30 V too high.			
	03		Error upon switching-on.			
E31	01	24 V General	Error upon switching-on.	Overload 24 VDC onto terminals X101, X104, X108, X110, X113.	Permanent.	A Restart after 10 s.
	02		Over- resp. under-voltage.			
E32	01	24 V Safety	Over- resp. under-voltage.	Overload, short-circuit 24 VDC onto terminals X108 or X110.		
E33	01	24 V E-Lock	Error: Over- resp. under-voltage.	Overload, short-circuit 24 VDC onto terminal X113.		
	02		Premonition: Over- resp. under-voltage.			
E34	01	24 V CAN	Over- resp. under-voltage.	Overload, short-circuit external power supply CAN.		

9.1.5 System

No.		Description	Cause	Elimination	Checking time	Reaction
E50	01...99	System error	Unexpected hardware or software event.	Switch the drive mechanism off/on. Carry out a Factory Reset, carry out a Software Update, inform the manufacturer.	Permanent.	W or H or F
E51	01...99					
E52	01...99					

9.1.6 Options

No.		Description	Cause	Elimination	Checking time	Reaction
E60	00	Relay PCB 0	Option PCB has been removed, its address changed or become defective.	Check if the option is provided. If defective: Replace or remove from the configuration. Note: Deleting of error 60 ⇨ see chapter 13.5.1.	Permanent.	W
	10	Relay PCB 1			Permanent.	W
	20	Relay PCB			Permanent.	W
	30	Fire-protection PCB			Permanent.	A

9.1.7 Closing sequence / Interlock function

No.		Description	Cause	Elimination	Checking time	Reaction
E70	xx	Bus setting	Address xx existing twice.	Correctly define the role of the closing sequence or the interlock function.	Permanent.	W
E71	01	Connection	No connection.	Connect the terminals, check or replace the cable. Check if all the participants are switched on.	Permanent.	W

9.2 Malfunction without error-no.

In some cases, it will be technically impossible to display an "irregular functioning" of the installation by a definite error number. An alleged error may by all means also be due to "correct" causes. For this reason the list shown hereafter has been established, which contains the probable or already encountered irregular functioning, their possible causes as well as the corrective action (error elimination) to be taken.

Malfunction	Analysis	Possible causes	Remedy
Drive unit fails to react: • No automatic opening. • No reaction on the control elements (side cover/D-Bedix).	• LED 5 V (green) on the control is not lighted.	Power supply voltage is missing.	• Measure the mains supply voltage, check its cabling and eliminate any detected deficiencies.
Drive unit fails to open.	• LED SE (safety element, yellow) is lit. • Determine the active safety element via the diagnostic level.	One or more safety elements are active or incorrectly cabled.	• Remove the obstacle. • Check the cabling between the safety element and the control unit, and eliminate any detected deficiencies. • Replace the safety element.
	• LED SE (safety element, yellow) is not lighted. • LED OE (opening command, blue) reacts to the opening element. • Determine the opening element via the diagnostic level.	Depending on the enabled operating mode, the opening commands (inside/ outside, etc.) are ignored.	• Change the operating mode. • Correct the cabling of the opening elements.
	• LED SE (safety element, yellow) is not lighted. • LED OE (opening command, blue) is not lighted despite the active opening element.	The opening ocmmand is not evaluated.	• Check the cabling between the opening element and the control unit and eliminate any detected deficiencies. • Replace the opening element.
Drive unit fails to close.	• LED SE (safety element, yellow) is lit.	One or more safety elements are active or incorrectly cabled.	• Remove the obstacle. • Check the cabling between the safety element and the control unit and eliminate any detected deficiencies. • Replace the safety element.
	• LED SE (safety element, yellow) is not lighted. • LED OE (opening command, blue) is lit.	An opening command is pending.	• Check the cabling between the opening element and the control unit and eliminate any detected deficiencies. • Replace the opening element.
	• Check the operating mode.	The operating mode OPEN is active.	• Change the operating mode.
The operating mode cannot be changed.	• The program selection switch in the side cover does not work.	The plug is not plugged in.	• Check the cabling and eliminate any detected deficiencies.
	• The operating mode symbol on the display is underlined.	The operating mode is overridden via connection terminal X115.	• Change the operating mode by means of the external program selector switch. • Correct the cabling of the external program selector switch.

9.3 Software update via USB

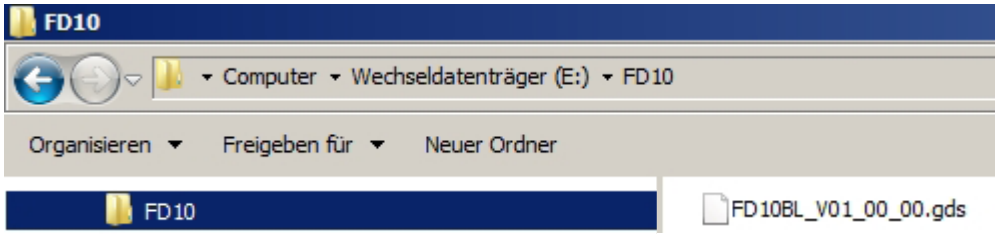
A software update of the FD 10 control unit can be easily and rapidly achieved by means of an USB memory stick.

Note:
Not all the USB memory sticks can be used. We thus recommend a previous testing of their function together with the FD 10.

9.3.1 Preparation

The USB stick must contain a folder FD10.
The file name of the application must specify FD10.
The name of the file extension must be **gds**.

⇨ The stick shall only contain one single FD10 folder.
⇨ There must be only one single file in the FD10 folder.



9.3.2 Procedure

1. FD 10 plug in the mains plug.
2. Plug the USB stick into the control unit ⇨ socket X111.
3. Go to UPDATE SW ⇨ in the menu and press the joystick once.
4. When "update last?" appears on the display ⇨ press the joystick once.
5. The software download takes approx. 1 minute ⇨ Watch the LED display on the ocntrol unit.
   The drive mechanism will switch off automatically while the download is taking place.
   The drive mechanism will reactivate automatically once the download is complete.
6. Remove the memory stick USB.

update last?

9.3.3. LED display on the control

The display of the functions is ensured via three LEDs on the control PCB:

SOK	Green	USB-Loader started
OE	Blue	Activity in progress (delete/write memory)
SOK + OE	Green/Blue	Download completed ⇨ remove the stick
SE	Yellow	Error

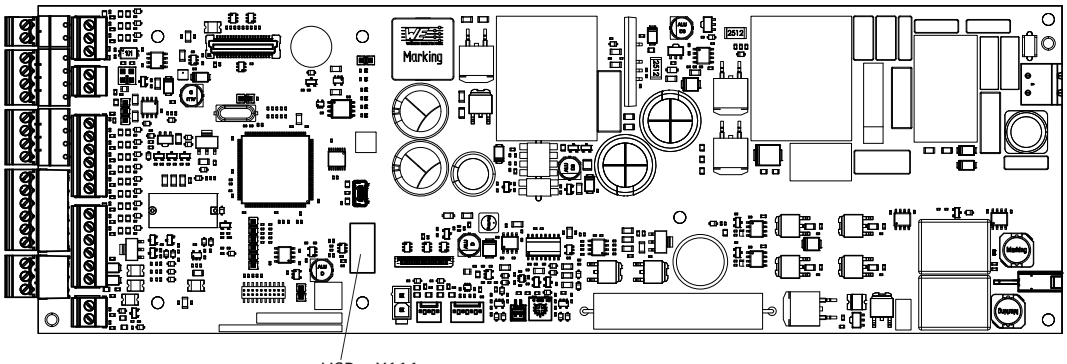
9.3.4 Possible errors

- Incorrectly formatted USB stick
  ⇨ this stick must be FAT or FAT 32 formatted (File Allocation Table from Microsoft).

- Several drives existing on the USB stick
  ⇨ only one drive is legible.

- Invalid file
  ⇨ Not encrypted, damaged, FD10 missing in the file name, **gds** missing in the file extension.

Control PCB



10 SHUT-DOWN

No particular measures need to be taken for de-commissioning the installation.

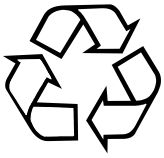
If the swing door drive mechanism will not be used during at least 1 month, it is recommended to pull out the mains plug.

For taking the installation back into operation, all you have to do is to plug in the mains cable and select the operating mode.

Attention:
If the installation is re-commissioned at low temperatures, it must be switched on 1...2 hours prior to the actual setting-up procedure (so that the operating temperature can be reached).

11 DISPOSAL OF THE INSTALLATION

An ecologically acceptable disposal of the installation is ensured if the different materials are separated and recycled. No particular measures are required for the protection of the environment. However, the relevant legal prescriptions applicable for the installation site have to be complied with!



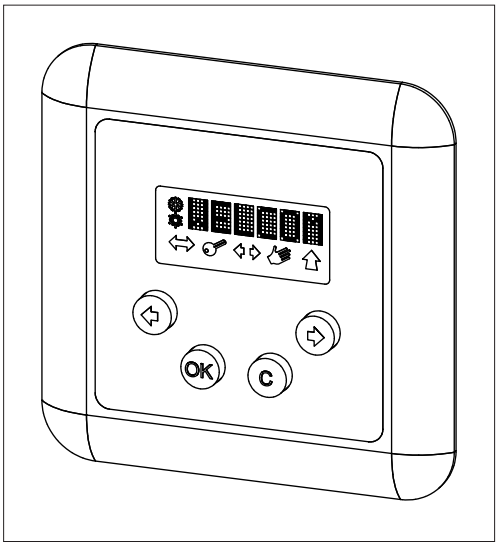
12 SPARE PARTS

Article No.	Designation	Remark
0549-110	Drive module complete	
0549-104	Fixing set	
0549-206	Relay PCB	Option
0635-142	D-BEDIX	Option
0548-133	Service D-BEDIX	for fitter
0549-326	Drive mechanism covering	Aluminium
0549-105	Covering accessories	Aluminium
0549-311	Drive mechanism covering	Stainless steel
0549-109	Covering accessories	Stainless steel
0549-112	Side cover incl. program selector switch	
0549-103	Side cover	
0549-500	Rating plate	
0549-204	Flexible cable routing	Option
0549-322	Protective plug	
0548-163	Normal rods RS	
0548-164	Sliding rods RG	
0549-115	Connection plate for wooden door leaf normal rods	Option
0548-190	Axle extension RG/RS + 10 mm	incl. Tuflok screw
0548-191	Axle extension RG/RS + 20 mm	incl. Tuflok screw
0549-192	Axle extension RG/RS + 30 mm	incl. Tuflok screw
0548-193	Axle extension RG/RS + 40 mm	incl. Tuflok screw
0548-194	Axle extension RG/RS + 50 mm	incl. Tuflok screw

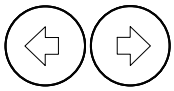
13 OPTIONS

13.1 D-BEDIX

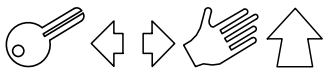
The different operating modes can be directly enabled by means of the D-BEDIX. In addition, it provides easy programming of the most important door settings.
The operating modes, menu settings as well as possible errors are displayed in a clearly arranged synopsis.
The D-BEDIX is connected to the control unit FD 10 via a screened two-core connection cable (e.g. U72M or EIB-Y(St)Y, max. length 50 m).
Only one D-BEDIX can be connected per door installation.



13.1.1 Keys

	C-key (Cancel) • Exit the menu • Invalidate entry.
	OK-key • Confirm the selection • Confirm the entry.
	Arrow keys • Navigate within the menus • Short simultaneous actuation of both keys = acces to the menu level.

13.1.2 Symbols

	Operating mode symbols • Show the possible operating modes (see chapter: Operating modes).	
	Selection frame (active and preselected operating mode) • Shows what has been presently selected.	
	Selection frame (active operating mode) • Shows what has been presently selected but is still inhibited. A control element with higher priority (e.g. key-operated switch) determines the operating mode.	
	Bar (preselected operating mode) • Shows the preselected operating mode.	

13.1.3 Operating modes

With the D-BEDIX, the following operating modes can be selected by means of the corresponding symbols:

	AUTOMATIC Automatic operation. The installation can be locked.
	NIGHT The installation is locked[1]. As opening commands, only the key-operated impulse switch is accepted. The delayed switchover to the operating mode NIGHT can be activated by means of parameter TdNigt. Function: If the program selector switch is changed to the operating mode NIGHT from any random operating mode, the internal radar will still remain active during the programmed time TdNigt (EXIT).
	OPEN The installation is opened and remains in the open position.
	MANUAL The installation stops. The swing door leaf is released and can be manually opened and closed.
	EXIT One-way traffic from inside towards the outside. The installation is locked[2] (shop closing switching mode).

[1] Provided that the locking mechanism (optional) is installed.
[2] Each operating mode can be locked (this is configurable).

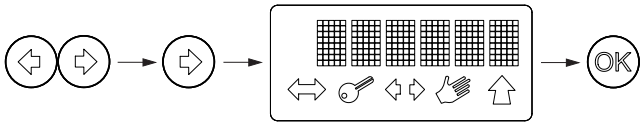
13.1.4 Display of the door position

The following door positions are represented onthe D-BEDIX display:

<REF?>	Waits for reference switch
< ?? >	Unknown
><	Closed
>##<	Closed and locked
<< >>	Opening
< >	Open
>> <<	Closing
==	Stopping

13.1.5 Menu level

Short and simultaneous actuation of both arrow keys (=access to the menu level).
Select the desired menu item bymeans of the arrow key.
Confirm by means of the OK key.



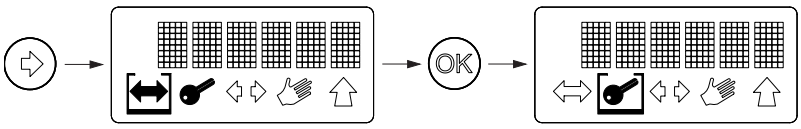
Display	Description
PARAMETER	Setting the motional parameters *
CONFIG	Setting the functionalities *
DOUBLE DOOR	Setting the closing sequence and interlock function *
DIAGNOSTICS	Diagnostic tool
ERROR ACTIVE	Active pending errors
ERROR HISTORY	Formerly active errors
REINIT	Carry out a re-initialization *
BLOCK/UNBLOC	Lock/unlock keys
TEACH	Initiate a setting-up procedure ⇨ make sure that the door leaf is completely closed.

* password protected

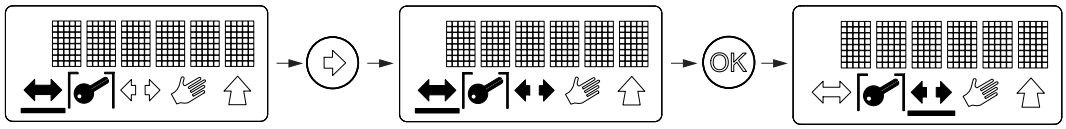
Note:
The detailed settings are described in chapter 7.1.

13.1.6 Setting examples

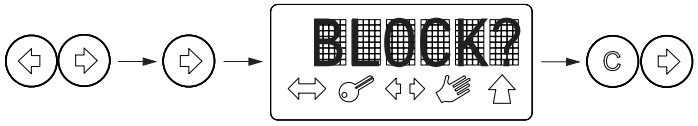
Changing the operating mode
Select the desired symbol by means of the arrow key (symbol starts flashing).
Confirm with the OK key (frame/bar switch over).



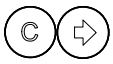
Preselecting the operating mode
An overriding switch is active and determines the operating mode (only the selection frame is visible, the bar underlines the preselected operating mode). Now you can select the operating mode you want to be active upon cancellation of the overriding switch:
Select the desired symbol by means of the arrow key (symbol starts flashing).
Confirm with the OK key (bar switches over).



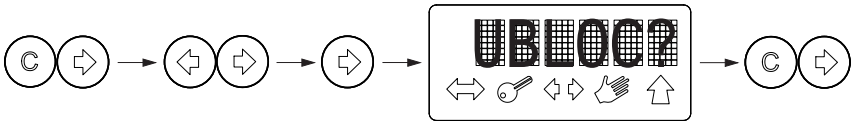
Enabling the keylock
Short simultaneous actuation of both arrow keys (= access to the menu level).
By means of the arrow key, select BLOCK.
Confirm with the C-key and the right-hand arrow key.



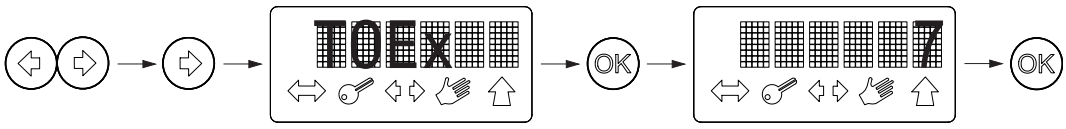
Temporarily disabling the keylock (60 s)
Short simultaneous actuation of the C-key and the right-hand arrow key.



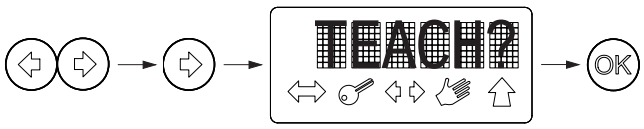
Disabling the keylock
Short simultaneous actuation of the C-key and the right-hand arrow key.
Short simultaneous actuation of the arrow keys (= access to the menu level).
By means of the arrow key, select UNBLOC.
Confirm with the C-key and the right-hand arrow key.



Parameters (hold-open timeday)
Short simultaneous actuation of the arrow keys (= access to the menu level).
By means of the arrow key, select TOEx.
Confirm with the OK key.
By means of the arrow key, change the value.
Confirm with the OK key.

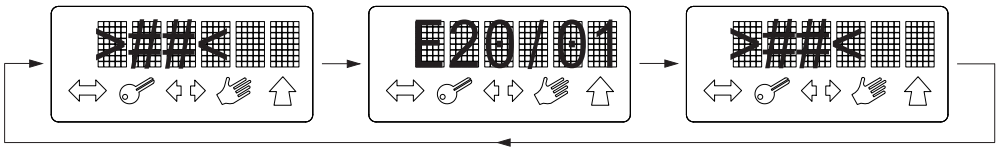


Teach
Completely close the door leaf.
Short simultaneous actuation of the arrow keys (= access to the menu level).
By means of the arrow key, select Teach.
Confirm with the OK key.



13.1.7 Error display

In the event of an error, the display shows (alternating with the door position status) the presently active error number (e.g. E20/01).
Error list: see chapter Troubleshooting.
This sequence will be repeated until the error has been eliminated.



13.2 KOMBI-D-BEDIX

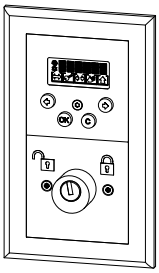
In addition to the functions of the D-BEDIX, the KOMBI-D-BEDIX contains a key-operated switch (round or profile cylinder) with the following function:

Lockout of the KOMBI-D-BEDIX against unauthorized use.

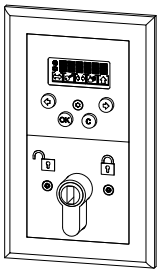
Free

Locked

If this lockout is enabled, all the keys are shortly lit (as a confirmation of the lockout).



Round cylinder



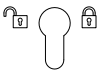
Profile cylinder

Cylinder: to be supplied by customers

0635-148/04

KABA 1514
SEA 1.043.0
DOM 2222H ix5
Driver with 8 adjus. possibilities

KESO 11.014.045
KESO 21.014.045
KESO 31.014.045
Adjustable beard E201



0635-148/02

KESO 21.214.040
Adjustable beard E200

DOM 333 ix-5
Driver with 8 adjusting possibilities

BKS 8900 N BL 31
BKS 3101 N BL 31
BKS 3301 N BL 31

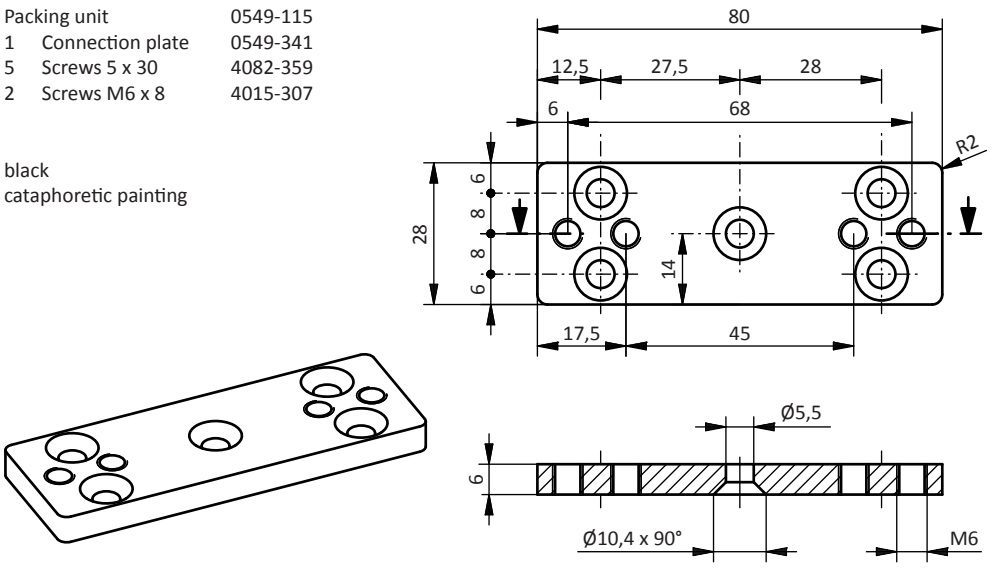
ZEISS IKON 0040
ZEISS IKON 5040
ZEISS IKON 5044
ZEISS IKON 6044
ZEISS IKON 7044

13.3 Connection plate for wooden door leaf (normal rods)

The connection plate is mounted below the door connection angle of the normal rod assembly and screwed down by means of countersunk chipboard screws 5 x 30.

Packing unit		0549-115
1	Connection plate	0549-341
5	Screws 5 x 30	4082-359
2	Screws M6 x 8	4015-307

black
cataphoretic painting

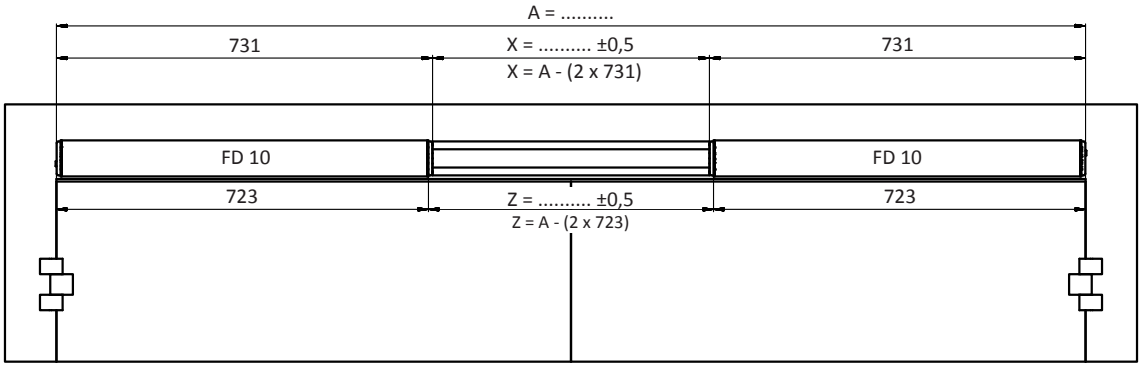


13.4 Continuous covering

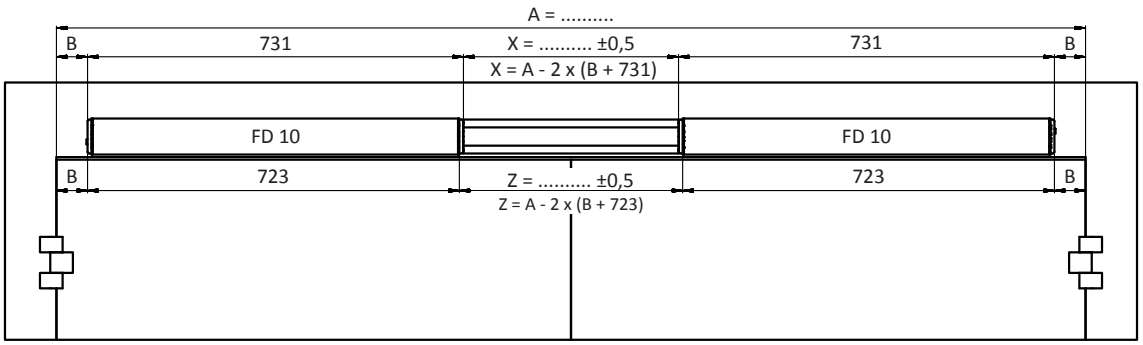
For bi-parting installations, the two drive mechanisms can be optically connected by inserting an intermediate covering piece.

	Set with drive mechanism covering 0,78 m Alu	0549-210	or
	Set with drive mechanism covering 0,78 m Inox	0549-211	
1	Drive mechanism covering Alu natural anodised E6/EV1	0549-343	
	Drive mechanism covering Inox	0549-344	
1	Intermediate profile Aluminium untreated 0,78 m	0549-346	
1	Fixing set	0549-210/90	

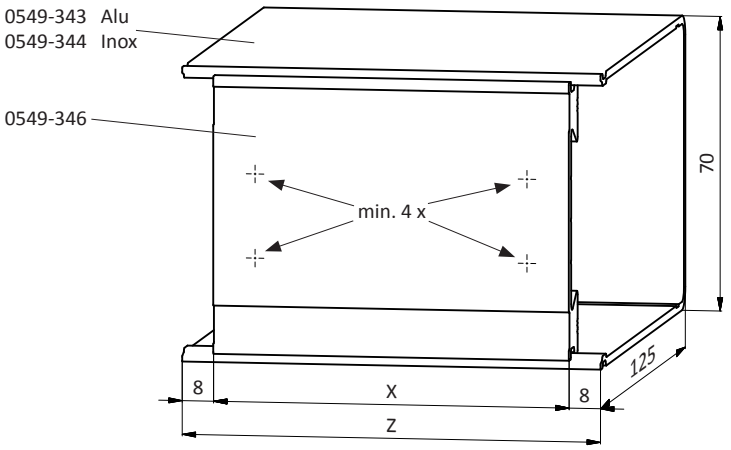
Normal rod
Sliding rod pulling function



Sliding rod pushing function



Lintel depth (mm)	B (mm)
-30...+50	60
51...80	70
81...120	80
121...150	90

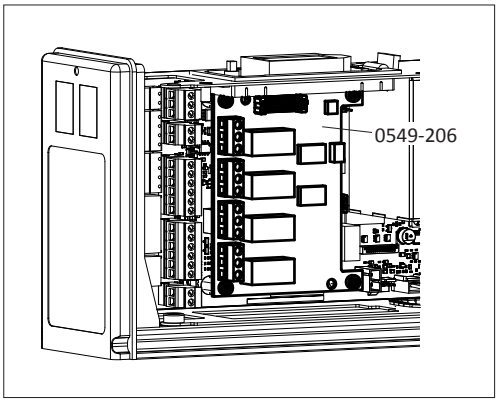


13.5 Optional PCBs

All the optional PCBs are plugged into the control unit via a universal connector. A maximum number of two optional PCBs can be combined.

Attention:
All optional PCBs must only be plugged into/removed from the control unit after the dive unit has been disconnected from the power supply source!

13.5.1 Relay PCB

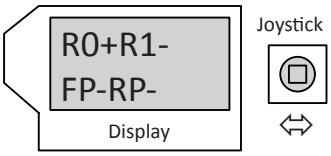


The relay PCB (blue) offers four outputs to be freely used by the customer.

Commissioning:

1. Addressing of the relay PCB by means of DIP-Switch:
   DIP-Switch Addr0 or Addr1.

2. Switch-on the main installation swtich on the drive mechanism ⇨ the relay PCB is automatically identified.
   The identified relay PCB is displayed as follows in the diagnostic menu:
   R0 Addr0
   R1 Addr1
   FP Fire protection PCB
   RP Radio PCB
   \+ identified and ready for operation
   \- neither identified nor registered
   e defective or error
   x removed



3. Enabling of the desired function per relay: under Settings ⇨ Configuration RC0.1 up to RC0.4 (for Addr 0) and RC1.1 up to RC1.4 (for Addr 1).

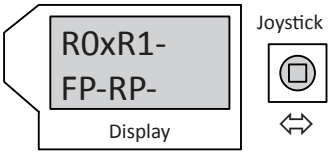
Remove the relay PCB:

1. Switch-off the main installation swtich on the drive mechanism.

2. Remove the relay PCB.

3. Switch-on the main installation swtich on the drive mechanism.
   Display: E60/00 ⇨ Addr0
   E60/10 ⇨ Addr1

4. Select menu: Diagnostics
   R0-R1-...
   R0xR1-...
   R0-R1x...
   R0xR1x...



5. In the rest position, press in the joystick: Reset OK? ⇨ The relay PCB is deleted from the configuration.

13.6 Safety sensors

Safety sensors are fitted to automated swing doors to monitor and protect their pivoting area. They are fitted to both sides of the door leaf. This guarantees maximum protection during both opening and closing of the door.
Basically, the instructions of the sensor manufacturer must always be observed when mounting the safety sensors! If the connecting wires of the safety sensors are not tin-plated, end sleeves must be used for the strands!

Function

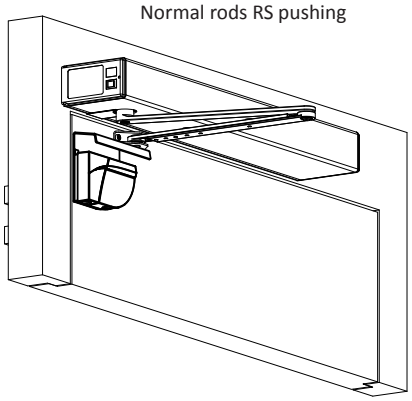
In opening direction:
Movement of the door leaf stops whenever the sensor detects an obstacle. Wall recognition of the safety sensor can be suppressed (adjusted).

In closing direction:
The safety sensor reverses the drive mechanism, and the closing door-leaf opens once more.

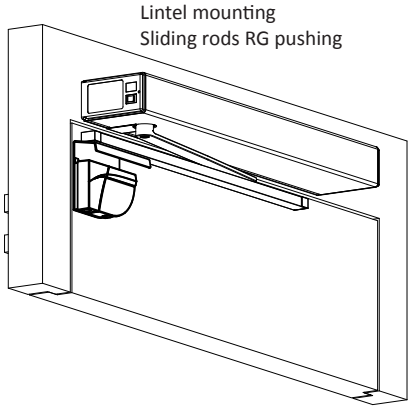
13.6.1 LZR-FLATSCAN

In the event of swing doors, the FLATSCAN is mounted on the moving leaf, on the upper leaf corners (as close as possible to the secondary closing edge). The FLATSCAN can only be used in pairs! Master and Slave are connected among each other (see wiring diagram in the appendix).
If a door radar is mounted directly above the FLATSCAN, it is compulsory to mount the weather canopy (for screening against radar mocrowaves).

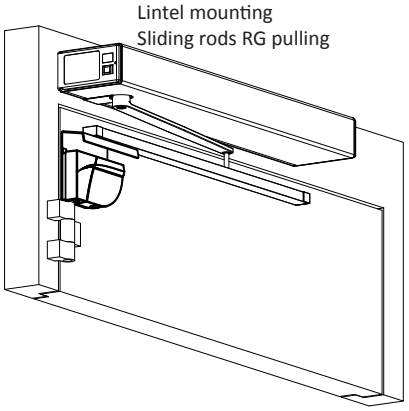
Lintel mounting
Normal rods RS pushing



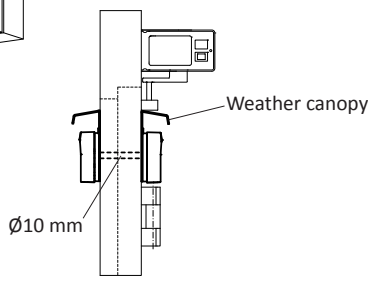
Lintel mounting
Sliding rods RG pushing



Lintel mounting
Sliding rods RG pulling



Mounting:
see mounting instructions LZR-FLATSCAN



14 APPENDIX

The following documents are added as an appendix to this instructions:

Wiring diagram E4-0141-724

Electrical documentation

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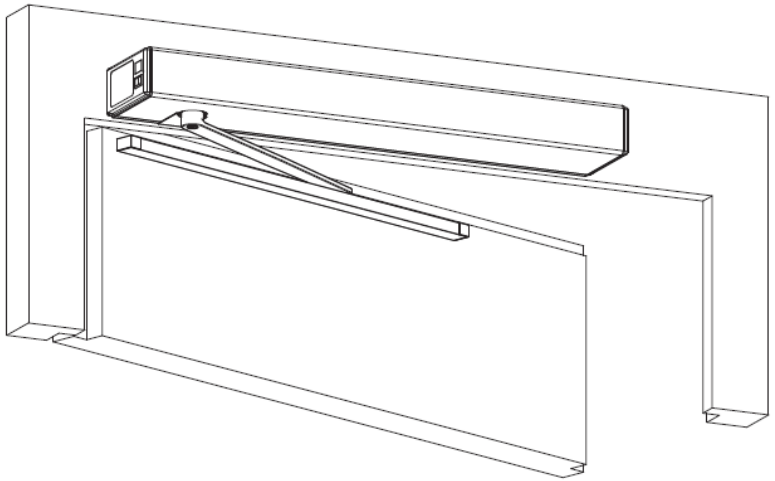
info@gilgendoorsystems.com
www.gilgendoorsystems.com

GILGEN DOOR SYSTEMS

Drive mechanism for swing door FD 10

- Overview
- Options
- Variants



Standard diagram no. E4-0141-724 a

				Reviewed by		Approved by			
				Designed by	06.11.2018	bdg	Standard diagram	Drive mechanism for swing door FD 10	Sheet no.
a	QS-Nr. 14'589	17.06.2019	lja	Reviewed by	12.06.2019	fpe		Cover sheet	
0	Erstellung	06.11.2018	bdg	Approved by	14.06.2019	lja		1	
Id.	Revision	Data	Name					Origin: / Substitution:	E4-0141-724 a / 1

Table of contents

Id.	Revision	Data	Name			
				Designed by	06.11.2018	bdg
				Reviewed by	12.06.2019	fpe
				Approved by	14.06.2019	lja

Standard diagram

GILGEN DOOR SYSTEMS

Drive mechanism for swing door FD 10
Table of contents
2

Origin:
Substitution:

E4-0141-724 a

Sheet no. 2

Control unit D-BEDIX
X105

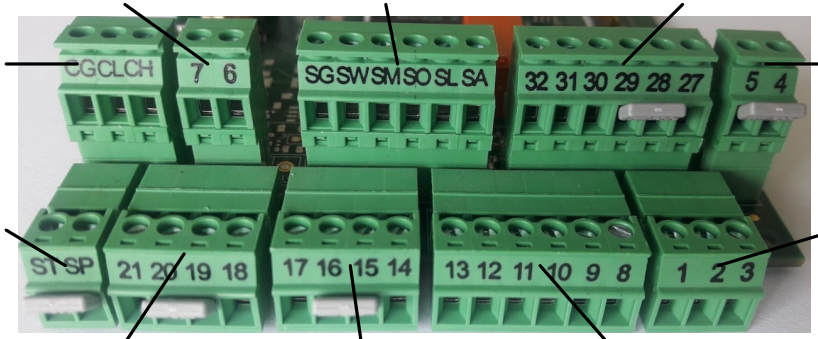
Selector switch for operating modes
X115

Electric lock
X113

CAN X109

X107
Emerg.-closing/-opening
Emergency Stop

Connection terminals



X112
Safety
Secondary closing edge

X104
Opening command Key
for ex. key-operated
switch-button

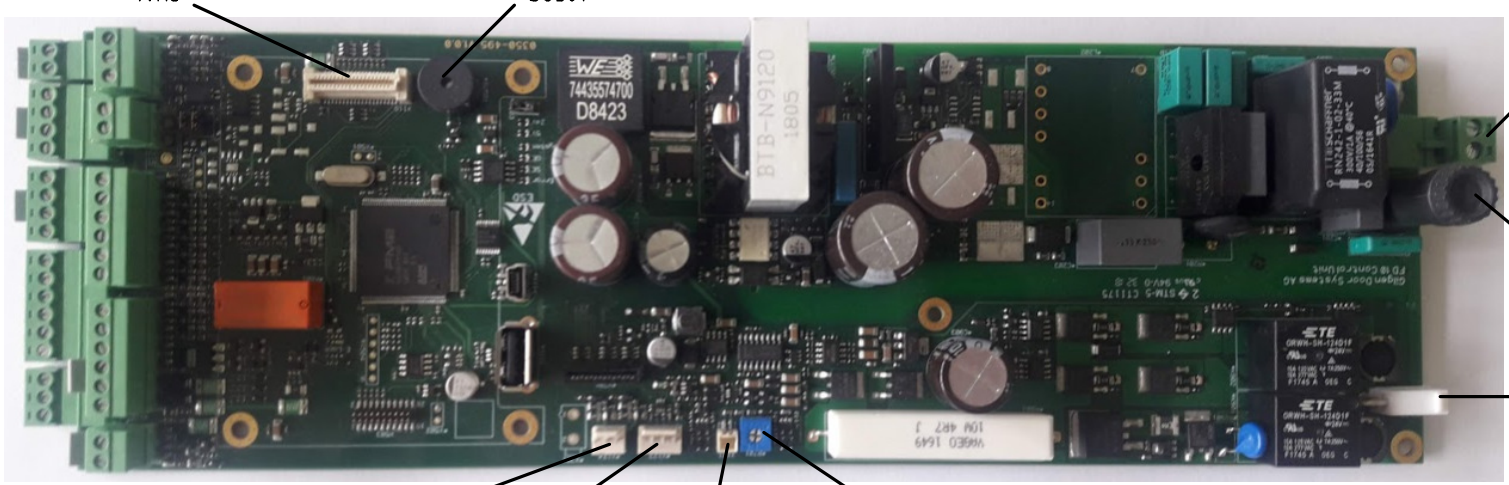
X110
Safety during closing
Reversing

X108
Safety during opening
Stop

X101
Opening command
inside/outside

Plug-in for options
X116

Buzzer
SU501



X102
Mains
pover supply

F201
Mains fuse
4AT

X122
Motor

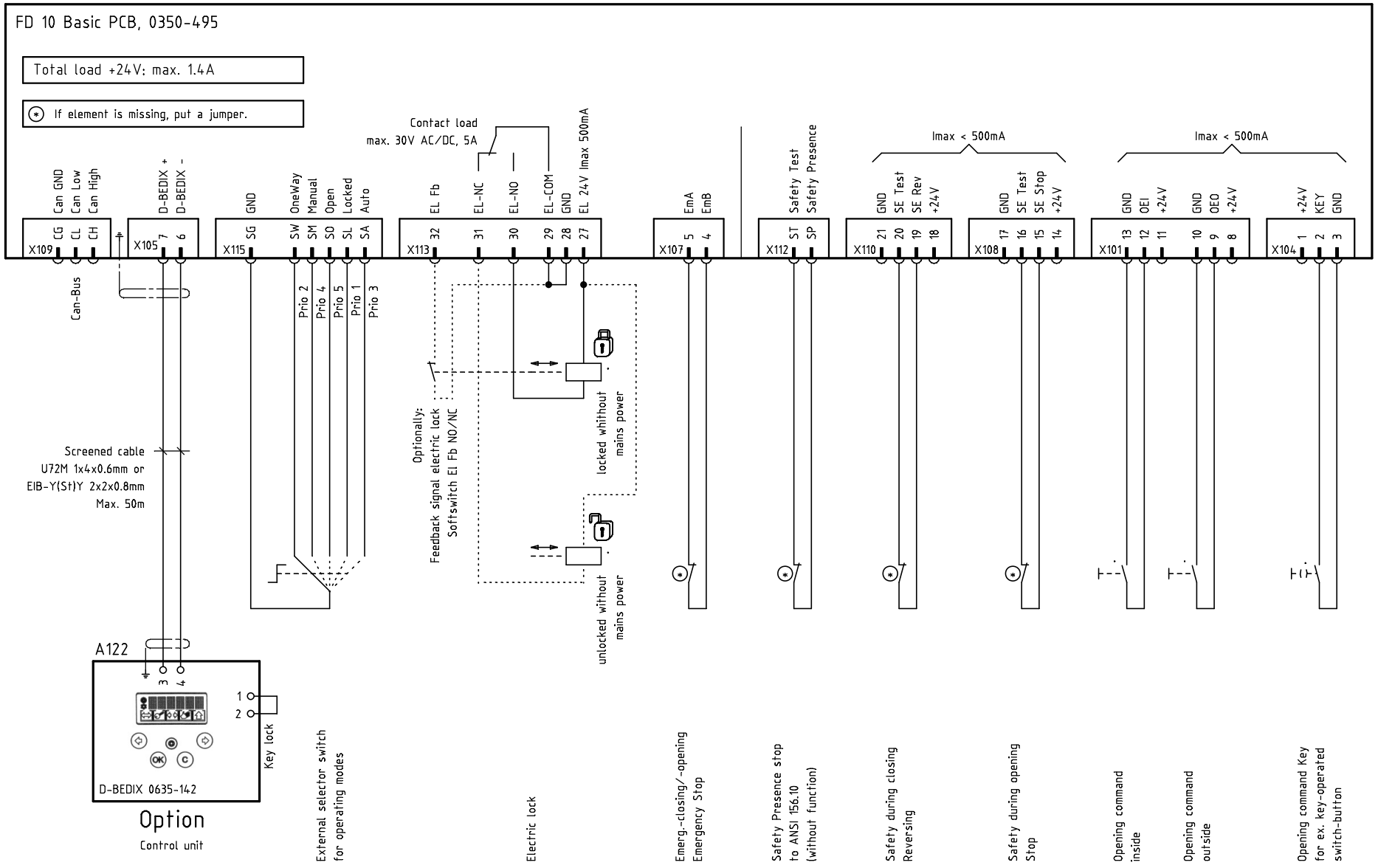
X124
Selector switch for
operating modes

X123
Encoder

X121
Reference switch

R701
Potentiometer for door closing
in manual operation

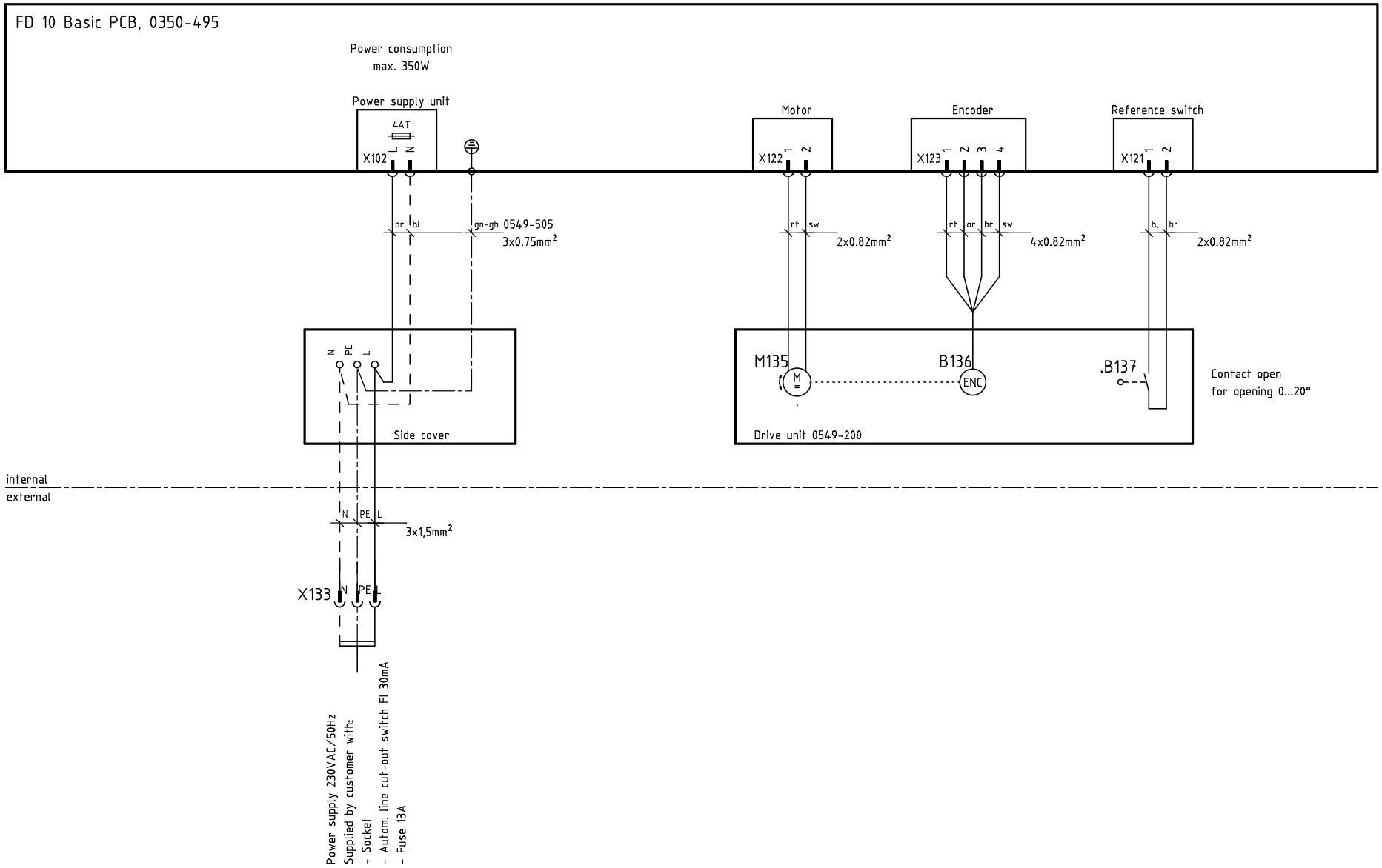
				Designed by	06.11.2018	bdg	Standard diagram	GILGEN DOOR SYSTEMS	Drive mechanism for swing door FD 10 Overview 11	Basic PCB Layout	Sheet no. 12
a	QS-Nr. 14'589	17.06.2019	lja	Reviewed by	12.06.2019	fpe					
0	Erstellung	06.11.2018	bdg	Approved by	14.06.2019	lja				Origin:	E4-0141-724 a
Id.	Revision	Data	Name							Substitution:	11



				Designed by	06.11.2018	bdg	Standard diagram	Drive mechanism for swing door FD 10	Overview connection terminals	Sheet no.
				Reviewed by	12.06.2019	fpe		Overview		11 13
a	QS-Nr. 14'589	17.06.2019	lja	Approved by	14.06.2019	lja	GILGEN DOOR SYSTEMS	12	Origin: Substitution:	E4-0141-724 a 12
Id.	Revision	Data	Name							

A121

FD 10 Basic PCB, 0350-495



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a	QS-Nr. 14'589	17.06.2019	lja	Reviewed by	12.06.2019	fpe	
0	Erstellung	06.11.2018	bdg	Approved by	14.06.2019	lja	
Id.	Revision	Data	Name				

GILGEN DOOR SYSTEMS

Drive mechanism for swing door FD 10
Overview
13

Power supply, Drive unit

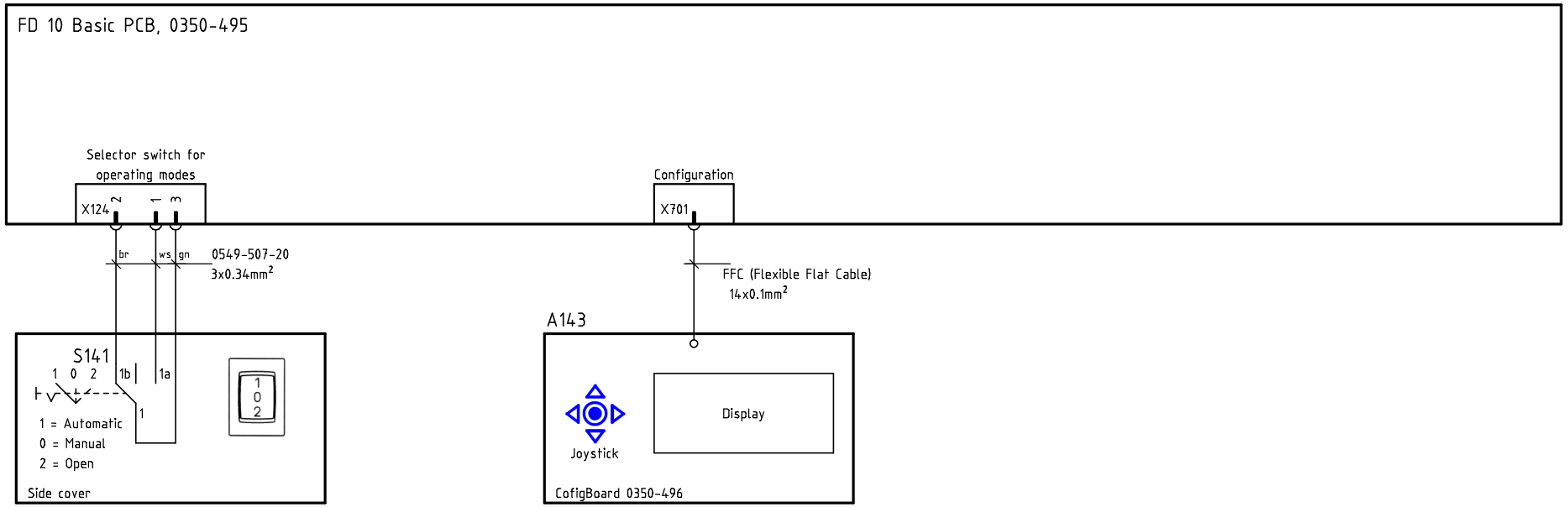
Origin:
Substitution:

E4-0141-724 a

Sheet no.
12 14
13

A121

FD 10 Basic PCB, 0350-495



internal

external

				Designed by	06.11.2018	bdg	Standard diagram
a	QS-Nr. 14'589	17.06.2019	lja	Reviewed by	12.06.2019	fpe	
0	Erstellung	06.11.2018	bdg	Approved by	14.06.2019	lja	
Id.	Revision	Data	Name				

GILGEN DOOR SYSTEMS

Drive mechanism for swing door FD 10
Overview
14

Operating elements internal

Origin:
Substitution:

E4-0141-724 a

Sheet no. 13

14

A121

FD 10 Basic PCB, 0350-495

Plug-in for options X116

A213

Optional relay PCB, 0548-215

S201

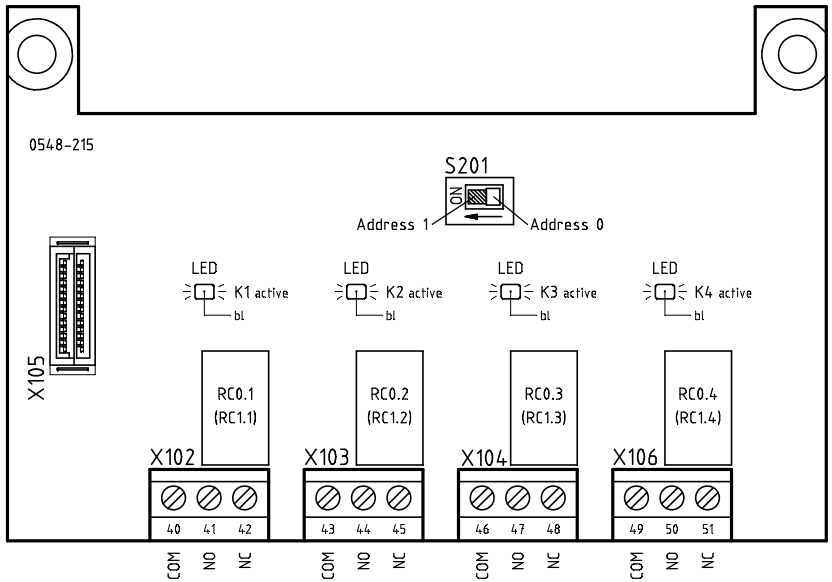
ON

Address 1 — Address 0

* Contact load in case of 30VDC: 5A ohmic

Address 0	RC0.1	RC0.2	RC0.3	RC0.4
Address 1	RC1.1	RC1.2	RC1.3	RC1.4

40	41	42	43	44	45	46	47	48	49	50	51
Door closed (Default)			Door open (Default)			Error (Default)			Gong (Default)		



X105

Plug-in for options

(one further option)

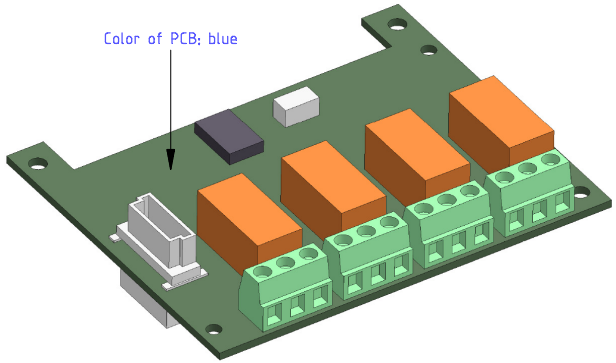
S201

Address

(in case of 2 optional relays)

Color LED:

bl / blau / bleu / blu / blue / azul



				Designed by	06.11.2018	bdg	Standard diagram	Drive mechanism for swing door FD 10	Relay PCB		Sheet no.
				Reviewed by	12.06.2019	fpe		Options			
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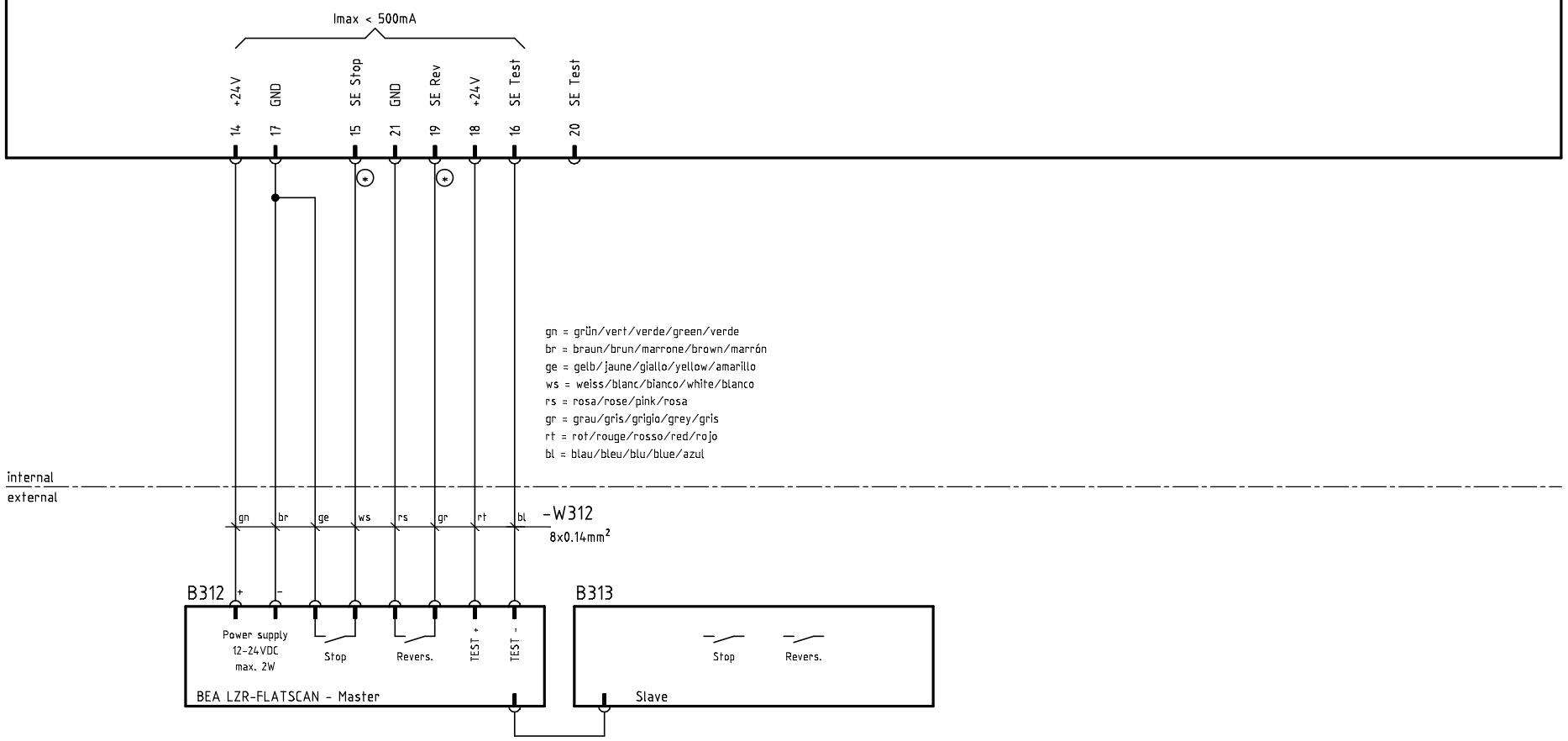
Id.	Revision	Data	Name					21	Substitution:		

GILGEN DOOR SYSTEMS

A121

FD 10 Basic PCB, 0350-495



Option

Safety element inside (Side drive unit)

Safety element outside (Opposite side)

				Designed by	06.11.2018	bdg	Standard diagram	Drive mechanism for swing door FD 10
				Reviewed by	12.06.2019	fpe		Options
a	QS-Nr. 14'589	17.06.2019	lja	Approved by	14.06.2019	lja		Safety elements
Id.	Revision	Data	Name					31

GILGEN DOOR SYSTEMS

BEA LZR-Flatscan		Sheet no.
Origin:	E4-0141-724 a	31
Substitution:		

A411

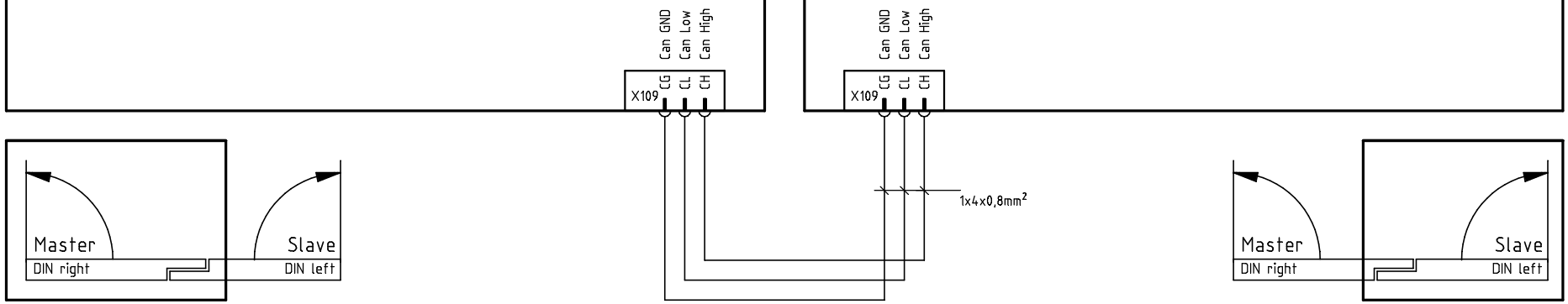
FD 10 Basic PCB, 0350-495

Master

A415

FD 10 Basic PCB, 0350-495

Slave



Settings Master	
Parameter	Setting
DubleD	MastrA (B)
AcSeq	0..110°
- Opening period for 1-wing operation - Starting retard (T-Delay) for Master	

Settings Slave	
Parameter	Setting
DubleD	SlaveA (B)
AoSeq	0..110°
- Opening period for 1-wing operation - Starting retard (T-Delay) for Slave	

Function Master	
Opening command Key/OEI/OEO	Only Master open
Selector switch for operating modes	Operating mode with highest priority is active, either pre-selection Master or pre-selection Slave
Emerg.-closing/-opening/Emergency Stop (Terminals 4-5)	Operates on MASTER and on SLAVE dependend of [CONFIG]- [EMY-IN]

Function Slave	
Opening command Key/OEI/OEO	Master and Slave open
Selector switch for operating modes	Operating mode with highest priority is active, either pre-selection Master or pre-selection Slave
Emerg.-closing/-opening/Emergency Stop (Terminals 4-5)	Operates only on SLAVE

				Designed by	06.11.2018	bdg	Standard diagram
a	QS-Nr. 14'589	17.06.2019	lja	Reviewed by	12.06.2019	fpe	
0	Erstellung	06.11.2018	bdg	Approved by	14.06.2019	lja	
Id.	Revision	Data	Name				

GILGEN DOOR SYSTEMS

Drive mechanism for swing door FD 10
Variants
Double door 2-winged
Closing sequence Master-Slave

Settings, Function

Origin:
Substitution:

E4-0141-724 a

Sheet no. 41