

FFT

**Installation instructions
and instructions for use**

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Translation of the original instructions

1. For your safety


This documentation contains important information regarding the mounting and the safe operation of the door system. Please read these instructions carefully before using the FFT.


It is important for your personal safety to abide by all enclosed instructions.


An incorrectly performed mounting might cause serious injuries.

Using control elements, making adjustments or performing procedures that are not described in this documentation might cause electric shocks, danger caused by electric voltage/current and/or danger due to mechanical incidents. Please keep these documents for further reference and hand them over to the person in charge in case the system is transferred to another party.

Explanation of symbols

 **NOTE** This symbol underlines important information that may facilitate your work.

 **REMARK** This symbol warns you of possible system damage and explains how to avoid this damage.

 **WARNING** This symbol indicates dangers that might cause personal or material damage or even kill people.

Intended application

The FFT is only designed to open and close bi-folding doors with an admissible door-leaf weight of not more than 80 kg.

The FFT is not suitable for application in emergency exits and escape routes, neither must it be used as fire door (fire and smoke door) nor as exterior door.

The cable length of external components must not exceed 30 m.

Limitation of liability

The FFT may only be used according to its specified intended application. **DORMA GmbH + Co. KG** will not accept any liability for damage resulting from unauthorised modifications of the door system. Furthermore components/accessories that have not been approved by **DORMA** are exempted from liability.

Safety instructions

 **Work on electrical equipment may only be performed by properly qualified staff (electricians).**

- Do not allow children to play with the FFT or its adjustment and control devices.
- Never stick metal objects into the openings of the door system; otherwise you might sustain an electric shock.
- Glass door panels have to be made of safety glass.

Important technical data

- Power supply 230 V / 50-60 Hz
- Fuse (by others) 10 A
- Operating noise < 60 dB (A)

Standards, laws, codes and regulations


The latest versions of the common and country-specific standards, laws, codes and regulations have to be observed.

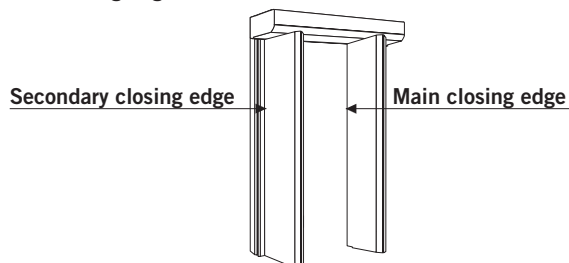
DIN 18650 (German Industrial Standard)


During the planning of the door system, the manufacturer (the person installing the system) and the commissioner/facility operator have to perform an individual risk assessment (together).

Please refer to our homepage www.dorma.com and consider the provided "risk assessment form" under **PRODUCTS** for further assistance when performing your individual risk assessment.


Dangers at closing edges

-  Automatic doors might cause hazards by crushing, shearing, hitting and drawing-in at the different closing edges.



-  Depending on the structural conditions, the prevailing door version and the available safety equipment, residual risks (such as crushing and hitting – with limited force) cannot be excluded.

Recycling and disposal

-  The FFT and its packing mainly consist of recyclable raw material, thus neither the FFT system nor its components/accessories should not be disposed of as domestic waste. Please ensure that the old appliance and the respective components/accessories (if available) are properly disposed of and abide by the prevailing national statutory provisions when disposing of the system and system components.

Safety during mounting

- The working area has to be secured against unauthorised access from other people. Falling items or tools might cause injuries.
- The FFT has to be secured against water and other liquids.
- In any case, the way of mounting and the mounting equipment, like for example screws and wall plugs, have to be adequate with regard to the structural conditions (steel structure, wood, concrete etc.).
- The mounting described herein is only an example. Structural or local conditions, available tools or other conditions might suggest a different approach.
- Following the mounting of the system, check the FFT and the connected safety equipment for proper functioning and adjustment and ensure that the system and its components are in good technical condition.
- Only specially qualified staff may open the power supply housing.
- Before you open the cover, ensure that the system is de-energised (disconnected from all mains) by switching off the fuse.

Safety during commissioning

- The protective earth conductor has to be connected.
- The safety sensors have to be connected (see commissioning instructions).
- Separately supplied components such as the program switch, the pushbutton for the EMERGENCY OPENING function and activators (radar motion detectors, NIGHT-/BANK key switches) have to be mounted and connected.
- The door leaves must run smoothly.
- The operator and the door leaf must be properly linked.

Inspection and system approval

A person trained by **DORMA** has to perform the inspection and approve the system with the aid of the inspection book. The respective results have to be documented in accordance with DIN 186502-2 and the facility operator has to keep these documents for at least one year.

Briefing

Following the adjustment, commissioning and functional testing of the door system, the operating instructions have to be handed over to the facility operator and a briefing has to be made.

Maintenance

The system has to be de-energised (disconnected from power supply) before performing any kind of maintenance work. De-energise the door system by switching off the fuse.

Before the first commissioning and depending on requirements, however, at least once a year, the door system has to be inspected by a properly qualified technician and serviced if required.

Please consider the inspection book (WN 056963-45532) for further information.

The working area has to be secured against unauthorised access from other people. Falling items or tools might cause injuries.

We would recommend taking out a maintenance agreement with **DORMA**.

Care

The system has to be de-energised (disconnected from power supply) before you clean the system. De-energise the door system by switching off the fuse.

You may clean the door system with a damp cloth and standard commercial detergents.

You should not use scouring agents for cleaning purposes as they might damage the surface finish.

Ensure that no water or other liquids drop onto or into the operator

Never stick metal objects into the openings of the operator; otherwise you might sustain an electric shock.

Wear

The following wear parts have to be inspected at regular intervals during the maintenance of the door system and must be replaced if required.

Wear part	Product lifecycle
Toothed belt	500,000 opening and closing cycles
Floor guide rollers	500,000 opening and closing cycles
Rechargeable battery pack	2 years

Only use original spare parts.

2. Declaration of conformity

de EG-KONFORMITÄTSEKTLÄRUNG	en EC DECLARATION OF CONFORMITY
Der Unterzeichner, der den nachstehenden Hersteller vertritt DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal	The undersigned representing the following manufacturer DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal Germany
erklärt hiermit, dass das Produkt DORMA FFT, DORMA FFT-F	declares that the product DORMA FFT, DORMA FFT-F
in Übereinstimmung ist mit den Bestimmungen der in der Anlage aufgeführten EG-Richtlinie(n) und dass die Normen und/oder technischen Spezifikationen zur Anwendung gelangt sind, die in der Anlage in Bezug genommen werden.	complies with the provisions of the EC Directive(s) specified in the Appendix and that the standards and/or technical specifications referred to in the Appendix were applied.

bg ЕС - ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ	CS ES PROHLÁŠENÍ O SHODĚ
Долуподписаният, който представлява производителя DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal	Níže podepsaný, který zastupuje následujícího výrobce DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
декларира с настоящето, че продуктът DORMA FFT, DORMA FFT-F	tímto prohlašuje, že výrobek DORMA FFT, DORMA FFT-F
е в съответствие с разпоредбите на посочените в съоръжението ЕС-директива(директиви) и че стандартите и/или техническите спецификации за приложението, споменати в съответното съоръжение, са изпълнени.	je v shodě s ustanoveními směrníc uvedených v příloze a že byly použity normy a/nebo technické údaje, na které se odkazuje v příloze.

da EF OVERENSSTEMMELSESEKTLÆRING	el ΕΕ - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ
Undertegnede, der repræsenterer følgende producent DORMA GmbH + Co. KG DORMA Platz 1 58256 D- Ennepetal	Ο κάτωθι υπογεγραμμένος, ο οποίος εκπροσωπεί τον ακόλουθο κατασκευαστή DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
erklærer hermed, at produktet DORMA FFT, DORMA FFT-F	δηλώνει ότι το προϊόν DORMA FFT, DORMA FFT-F
er i overensstemmelse med bestemmelserne i EU-direktiv(erne), der er anført i tillægget, og at de nævnte standarder og/eller de tekniske specifikationer i tillægget er blevet anvendt.	αναποκρίνεται στους κανονισμούς των Ευρωπαϊκών Οδηγιών που αναφέρονται στο παράρτημα και ότι πληρούνται οι κανόνες και/ή οι τεχνικές προδιαγραφές, για τις οποίες γίνεται μνεία στο παράρτημα.

es DECLARACIÓN DE CONFORMIDAD CE	et EÜ VASTAVUSDEKLARATSIOON
El contratante en representación del fabricante a continuación DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal	Allakirjutanu, kes esindab alljärgnevat tootjat DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
declara por la presente que el producto DORMA FFT, DORMA FFT-F	kinnitab käesolevaga, et toode DORMA FFT, DORMA FFT-F
está acorde con las disposiciones de la(s) directiva(s) CE indicada(s) en el anexo y que las normas y/o especificaciones técnicas son aplicables al uso al que se hace referencia en el anexo.	on vastavuses lisas kirjasoleva(te) EU-direktiivi(de) määrustega ja et lisas mainitud norme ja/või tehnilisi andmeid on tootmisel kasutatud.

fi EU-VAATIMUSTENMUKAISUUSVAKUUTUS	fr DECLARATION CE DE CONFORMITE
Allekirjoittanut, joka edustaa alla mainittua valmistajaa DORMA GmbH + Co. KG DORMA Platz 1 D-58256 Ennepetal	Le signataire, qui représente le fournisseur suivant DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
vakuuttaa, että tuote DORMA FFT, DORMA FFT-F	déclare par la suivante que le produit DORMA FFT, DORMA FFT-F
täyttää laitteessa esitettyjen EU-direktiivien asettamat ehdot ja että vaadittavat standardit ja/tai tekniset määräykset täytetään, jotka laitteen käytössä tulee ottaa huomioon.	est conforme aux règlements de l'installation décrite par la ou les directive(s) CE, et que les normes et/ou les spécifications techniques permettent l'utilisation dont il est fait état dans l'installation.

hu EK MEGFELELŐSÉGI NYILATKOZAT	it DICHIARAZIONE CE DI CONFORMITÀ
Alulírott, aki a lenti gyártót képviseli DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal	Il sottoscritto, rappresentante del produttore qui riportato DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
ezennel kijelenti, hogy az alábbi termék DORMA FFT, DORMA FFT-F	dichiara con la presente che il prodotto DORMA FFT, DORMA FFT-F
a mellékletben feltüntetett EK-irányelv(ek) rendelkezéseinek megfelel, és a mellékletben hivatkozott szabványok és/vagy műszaki specifikációk alkalmazásra kerültek.	è conforme alle prescrizioni della/e direttiva/e CE riportate in allegato e che le norme e/o specifiche tecniche in esse contenute trovano applicazione per l'impiego per il quale si fa riferimento per l'impianto.

lt EB ATITIKTIES DEKLARACIJA	lv EK-ATBILSTĪBAS DEKLARĀCIJA
Pasirašiusysis, kuris atstovauja toliau nurodytam gamintojui: bendrovei „DORMA GmbH + Co. KG“ DORMA Platz 1 58256 Ennepetal	Šī dokumenta parakstītājs, kurš pārstāv zemāk minēto ražotāju: DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
pareiškia, kad gaminys DORMA FFT, DORMA FFT-F	aplīcina, ka izstrādājums DORMA FFT, DORMA FFT-F
atitinka priede pateikiamos EB direktyvos (-ų) nuostatas ir kad jam taikomos priede nurodytos normas ir (arba) techninės specifikacijos.	atbilst pielikumā minētajiem EK direktīvu norādījumiem un, ka pielikumā norādītās normas un/ vai tehniskās specifikācijas ir ievērotas.

nl EG-VERKLARING VAN OVEREENSTEMMING	no EF SAMSVARSERKLÆRING
Ondergetekende, optredend namens hiernagenoemd fabrikant DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal	Undertegneren, som representerer den nedenforstående producenten DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
verklaart bij dezen, dat het product DORMA FFT, DORMA FFT-F	erklærer med dette at produktet DORMA FFT, DORMA FFT-F
voldoet aan de betalingen van de in de bijlage vermelde EG-richtlijn(en) en dat de normen en/of technische specificaties zijn toegepast, naar welke in de bijlage wordt gerefereerd.	er i overensstemmelse med de vedlagte bestemmelse for EF-direktivet (-direktivene) i vedlegget, og at de normene og/eller tekniske spesifikasjonene er lagt til grunn som det henvises til i vedlegget.

pl DEKLARACJA ZGODNOŚCI WE	pt DECLARAÇÃO CE DE CONFORMIDADE
Poniżej podpisany przedstawiciel, który reprezentuje producenta DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal	O Signatário, que representa o fabricante abaixo referido, DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
deklaruje niniejszym, że produkt DORMA FFT, DORMA FFT-F	declara pela presente que o produto DORMA FFT, DORMA FFT-F
jest zgodny z postanowieniami dyrektywy (dyrektyw) WE podanej (podanych) w załączniku i że zastosowano normy i/lub specyfikacje techniczne, do których odniesiono się w załączniku.	cumpra as condições da(s) Directiva(s) CE referida(s) no Anexo e que foram aplicadas as normas e/ou especificações técnicas às quais é feita referência no Anexo.

ro DECLARAȚIE DE CONFORMITATE CE	sk ES VYHLÁSENIE O ZHODE
Subsemnatul, care reprezintă producătorul de mai jos DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal	Podpisujúci, ktorý zastupuje nasledovného výrobcu DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
declară prin prezenta că produsul DORMA FFT, DORMA FFT-F	țymto vyhlasuje, že výrobok DORMA FFT, DORMA FFT-F
îndeplinește prevederile directivei (directivelor) menționate în anexă și că au fost aplicate normele și/sau specificațiile tehnice la care se face referire în anexă.	je v zhode s ustanoveniami smerníc uvedených v prílohe a že boli použité normy a/alebo technické údaje, na ktoré sa odkazuje v prílohe.

sl ES - IZJAVA O SKLADNOSTI	sv EG-FÖRSÄKRAN OM ÖVERENSSTÄMMELSE
Podpisani, ki zastopa sledečega proizvajalca DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal	Undertecknad firma som representerar nedanstående tillverkare DORMA GmbH + Co. KG DORMA Platz 1 58256 Ennepetal
s tem izjavlja, da je proizvod DORMA FFT, DORMA FFT-F	förklarar härmed att produkten DORMA FFT, DORMA FFT-F
v skladu z določili v prilogi navedene/ih smernic/e EU ter da so norme in/ali tehnične specifikacije v rabi tako, kot se nanje navezuje v prilogi.	står i överensstämmelse med de bestämmelser i EG-direktivet(-direktiven) som anges i bilagan och att de normer och/eller de tekniska specifikationer till vilka det hänvisas i bilagan har använts.

Ennepetal, 18.10.2011



O. Schubert
Chief Operations Officer

Anlage / Attachment / Annexe: 18.10.2011 SU

Richtlinie / Directive

X	2006/95/EG	Niederspannungsrichtlinie / Low Voltage Directive / Directive basse tension
	89/106/EWG/EEC/CEE	Bauprodukte / Building products / Produits de construction
X	2004/108/EG	Elektromagnetische Verträglichkeit / Electromagnetic compatibility / Compatibilité électromagnétique
X	2006/42/EG	Maschinenrichtlinie / Machinery directive / Directive machine Die technischen Unterlagen sind erhältlich beim Manager Productcompliance unter: / The technical documentation is available from the Product Compliance Manager at: / Les documents techniques sont disponibles auprès du Manager conformité produit à l'adresse suivante: product.compliance@dorma.com

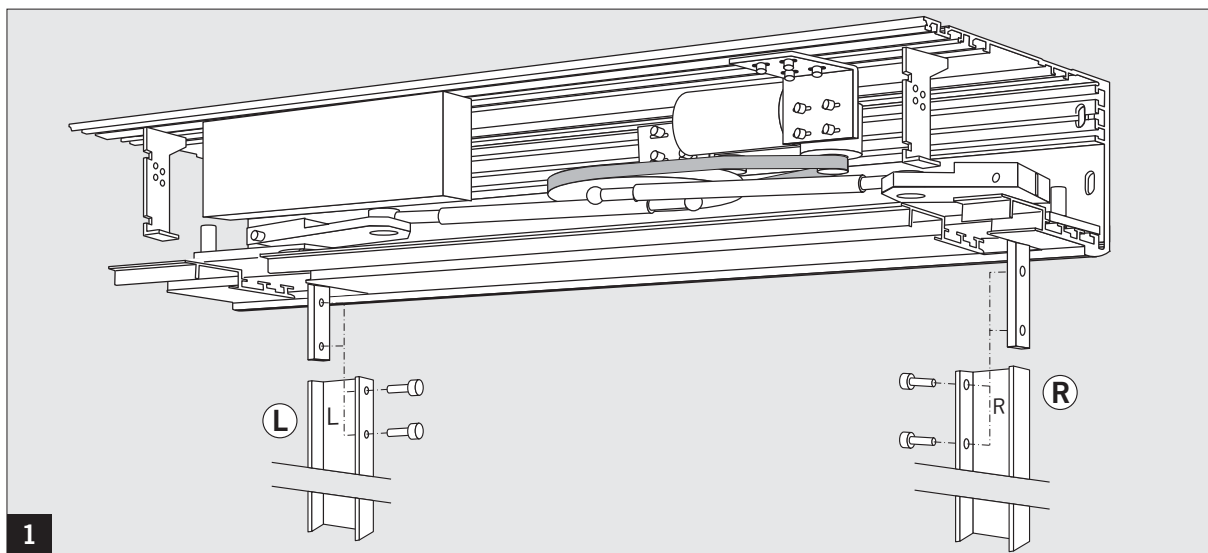
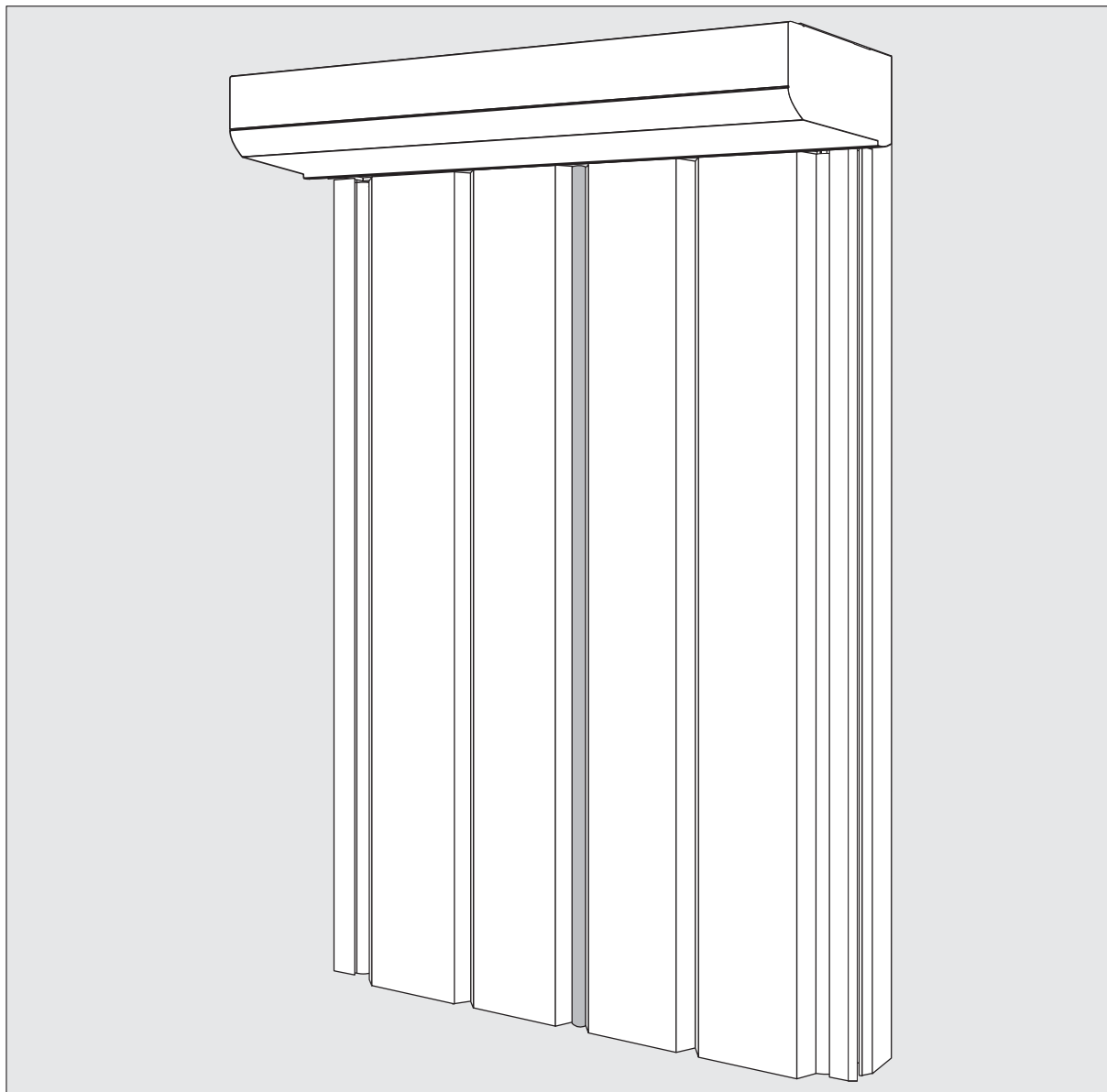
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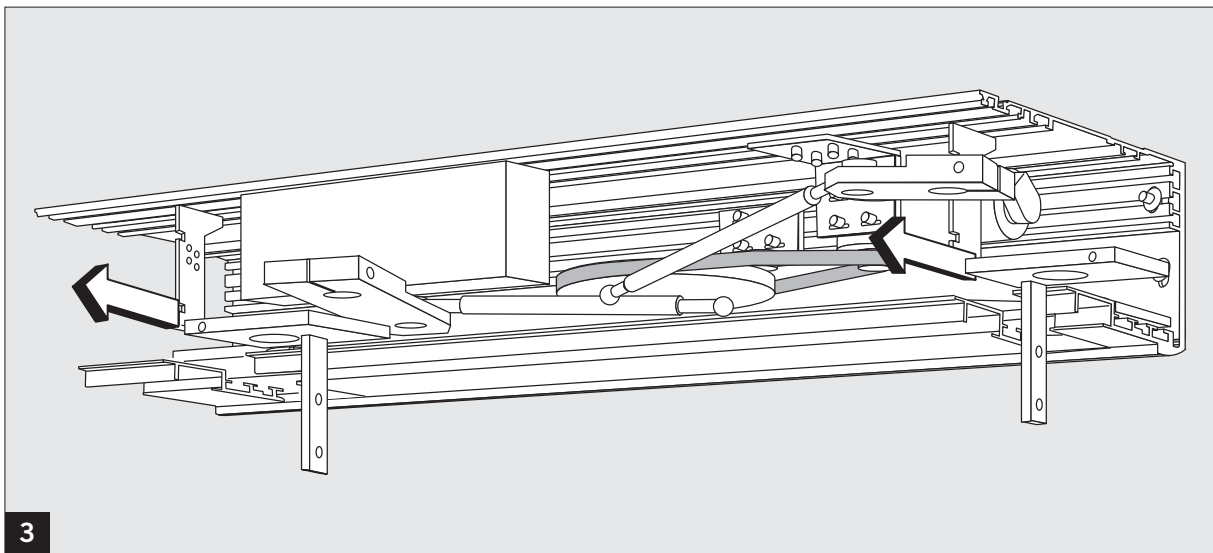
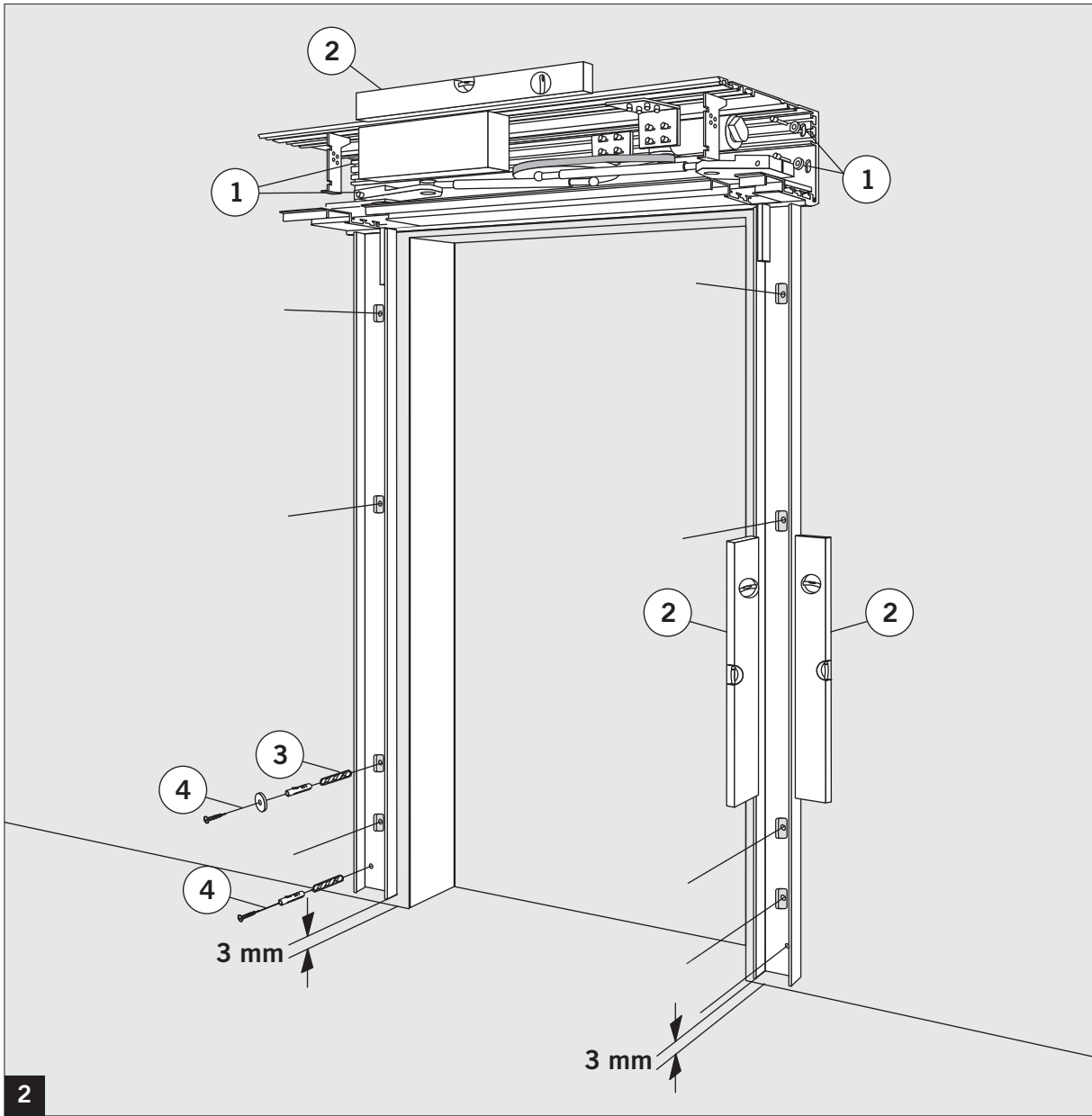
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X	EN ISO 14121-1	X	EN 55022		EN 1155
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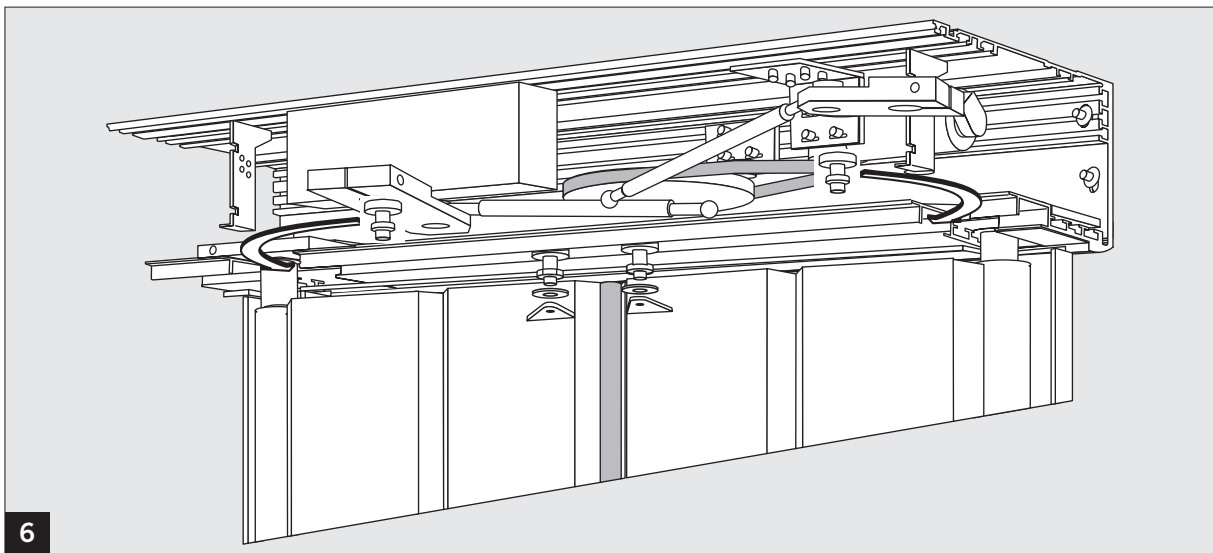
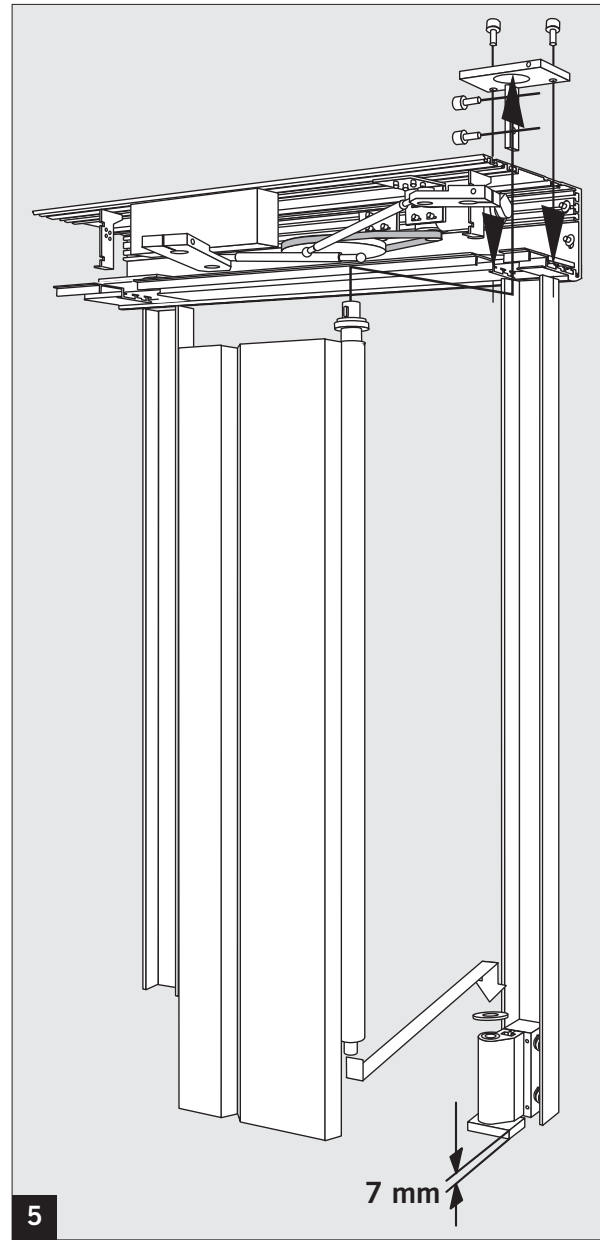
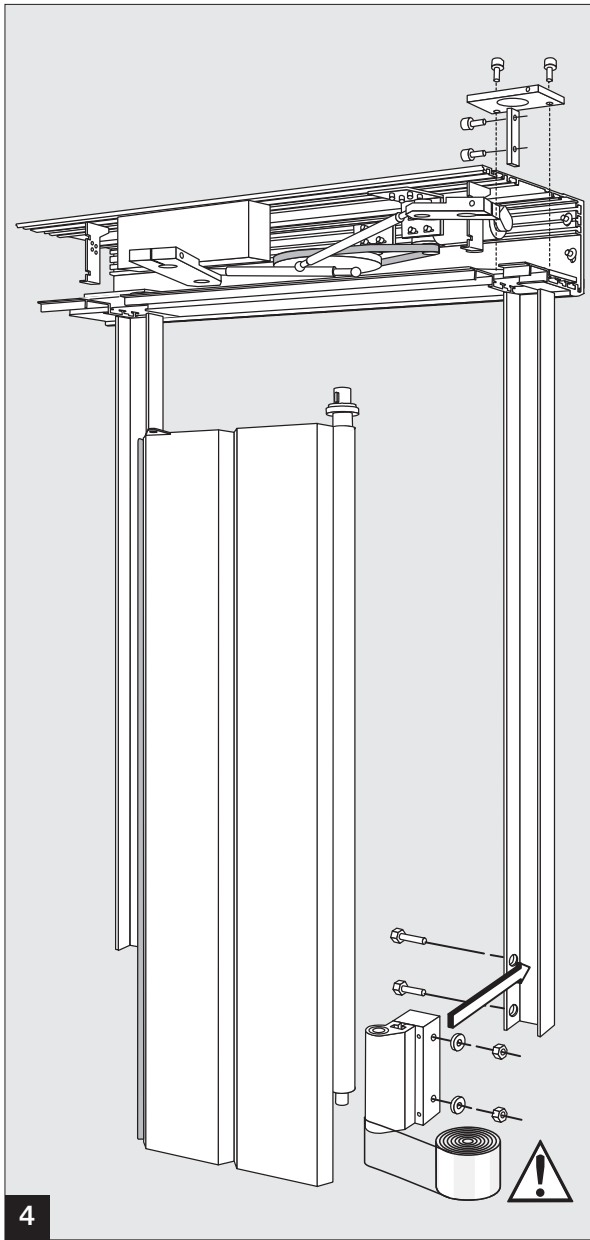
Andere in Bezug genommene Dokumente oder Informationen, die von den anzuwendenden EG-Richtlinien, Normen und technischen Spezifikationen gefordert werden. / Other references or information required by the applicable EC directive(s), standards and technical specification. / Autres références ou information demandées par la (les) directive(s) CE d'application et que les normes et spécifications techniques:

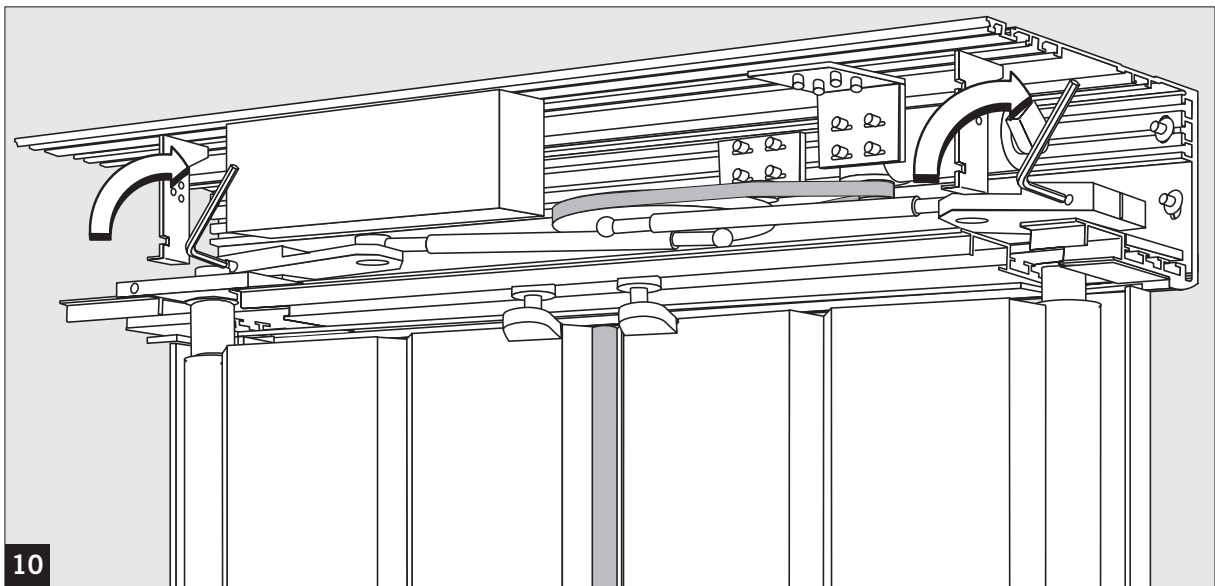
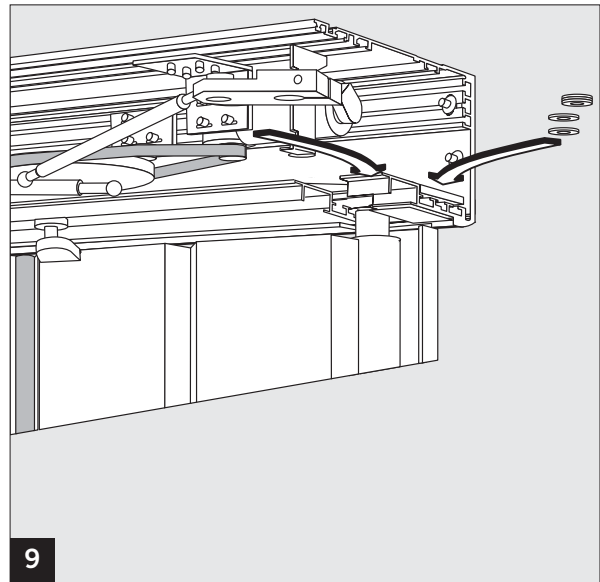
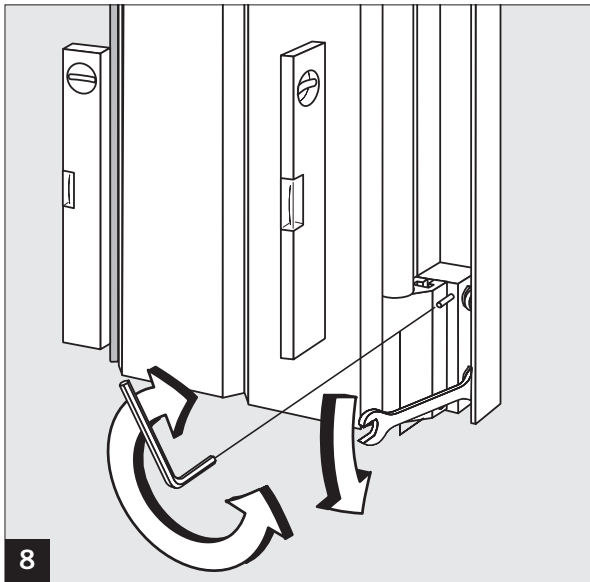
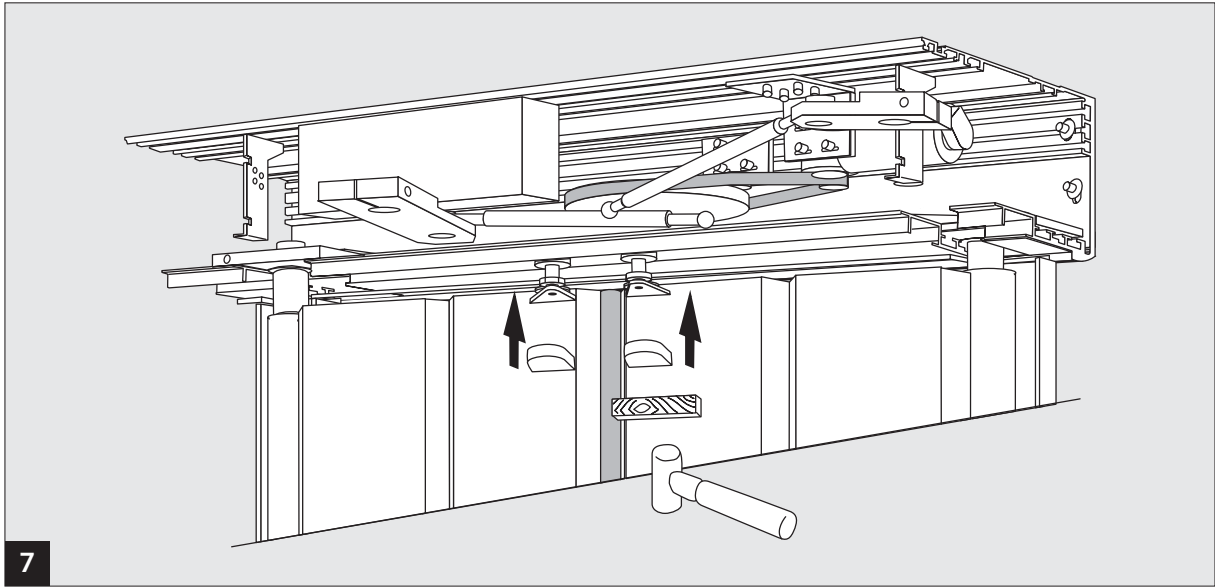
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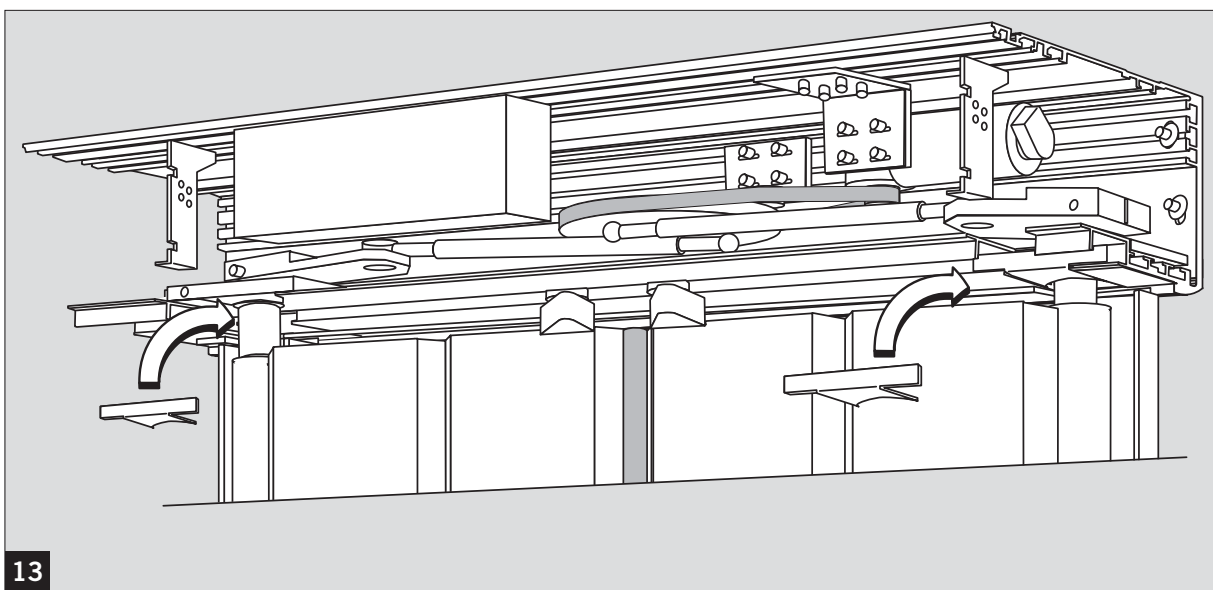
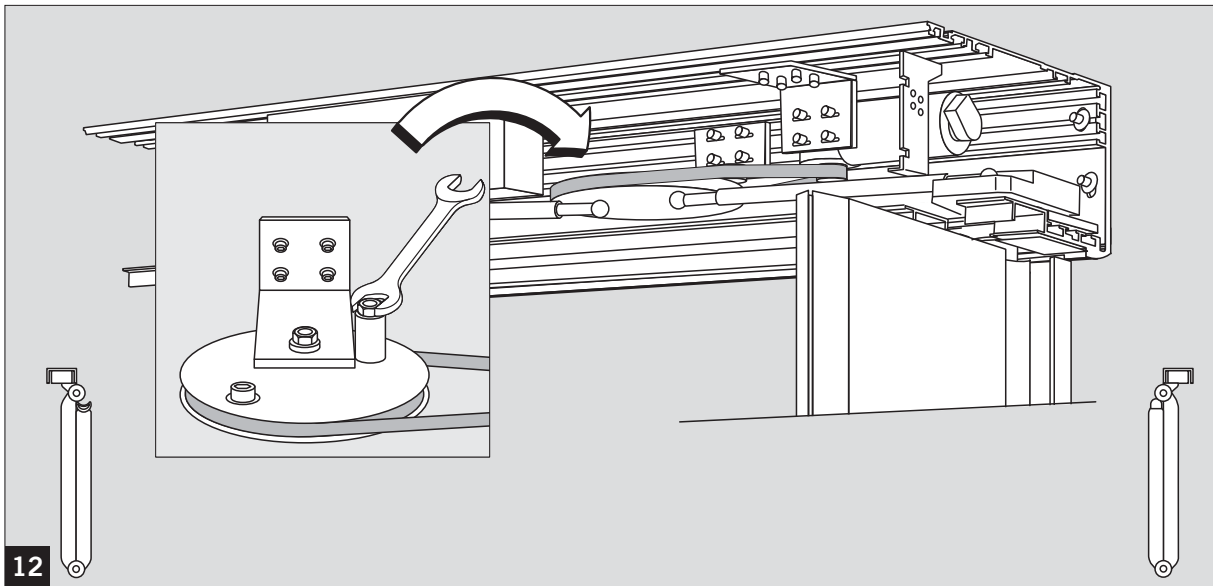
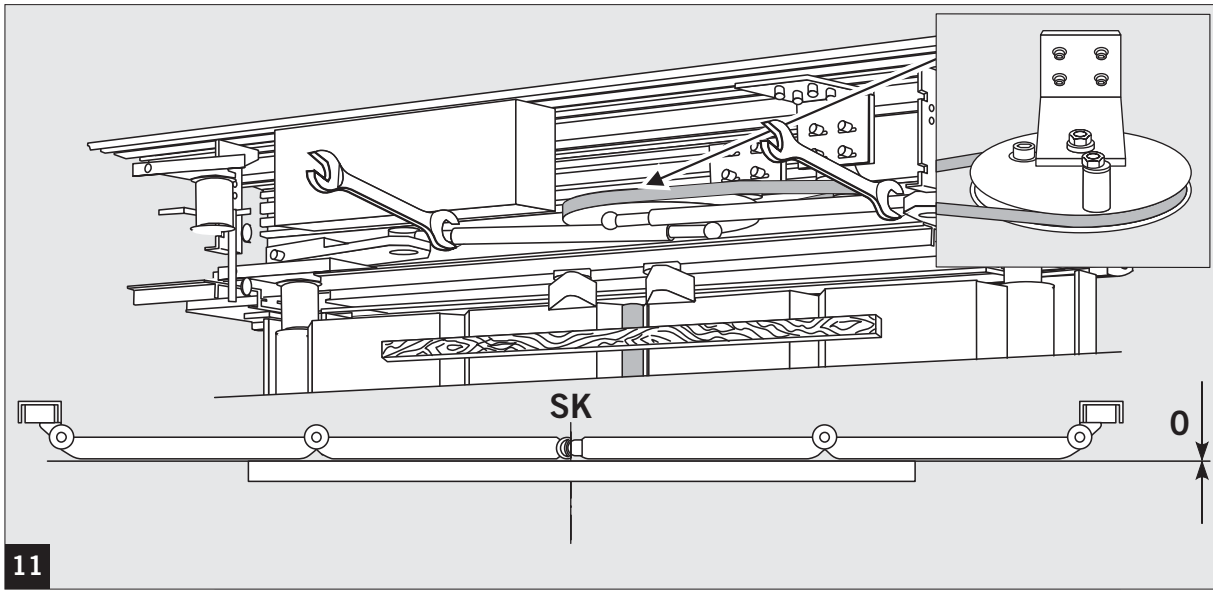
3. Mounting instructions

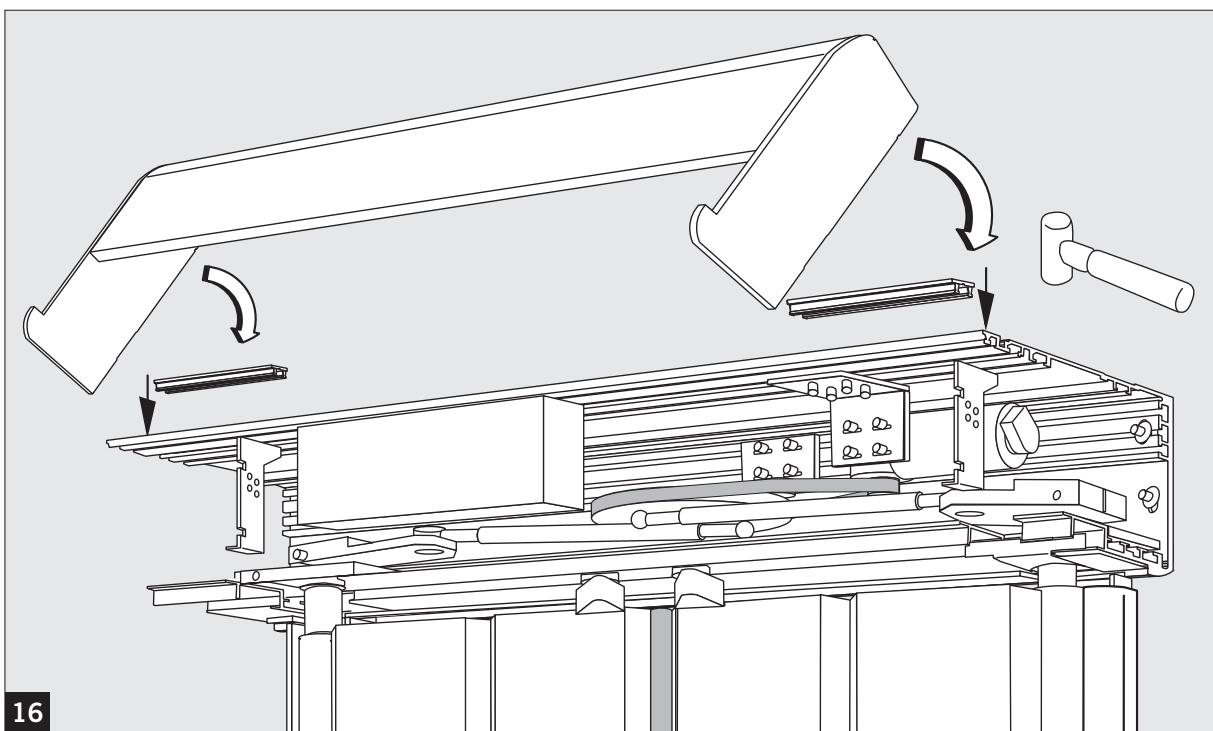
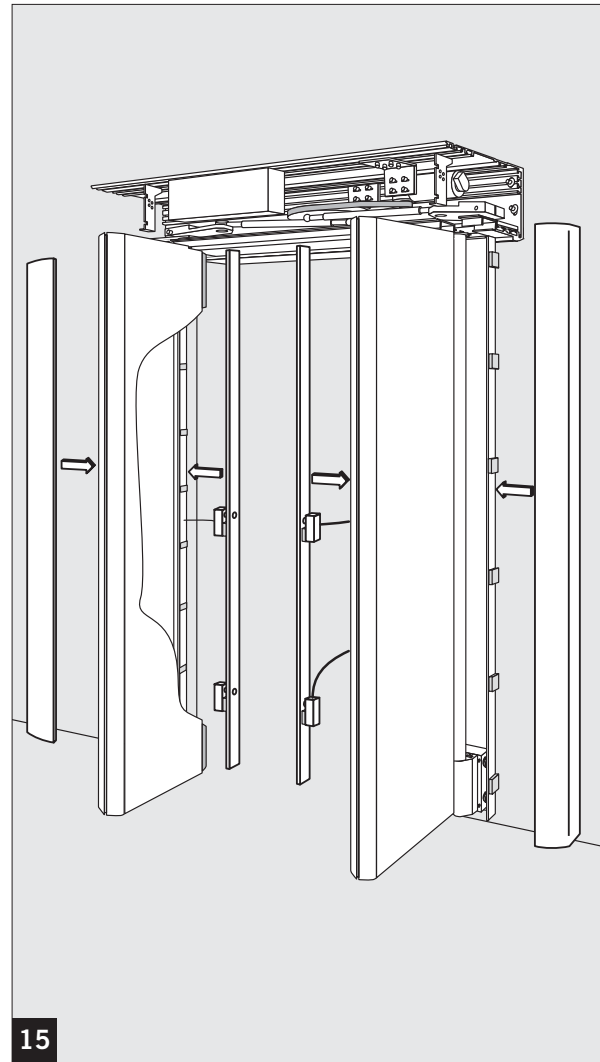
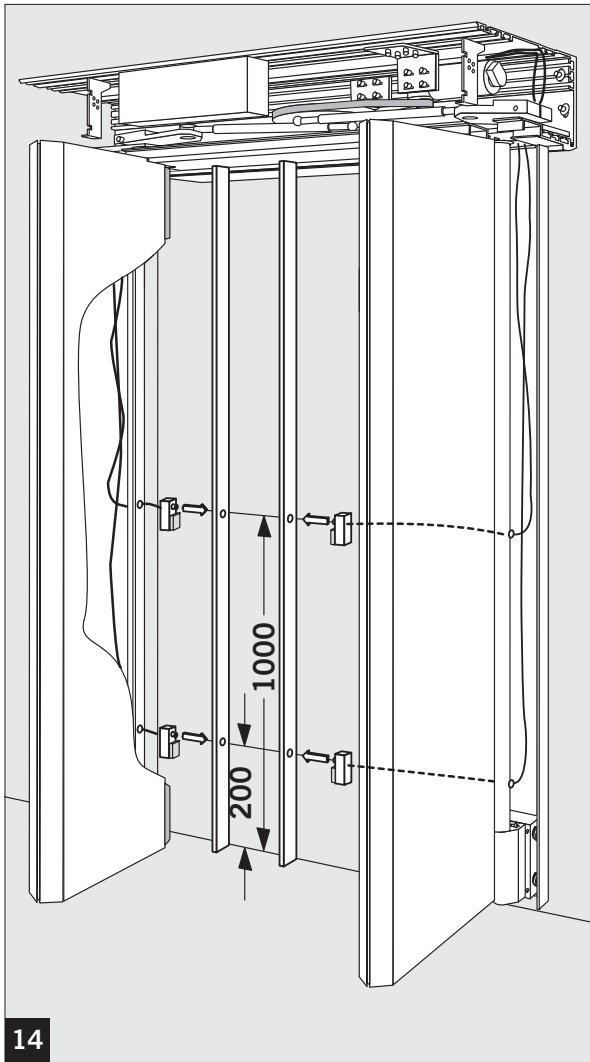


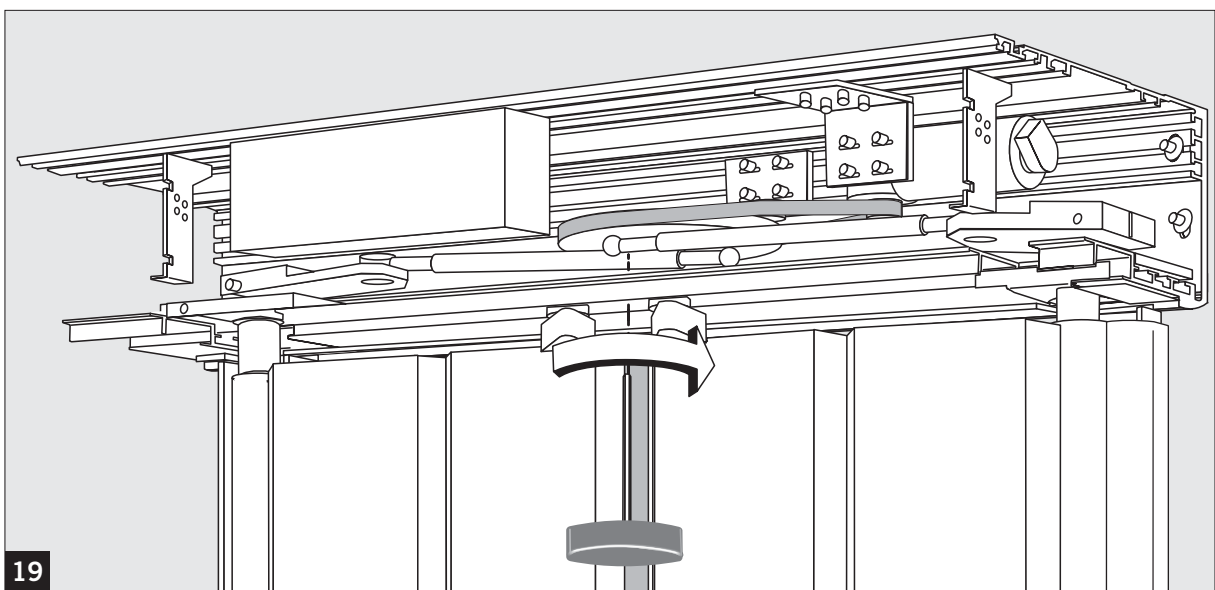
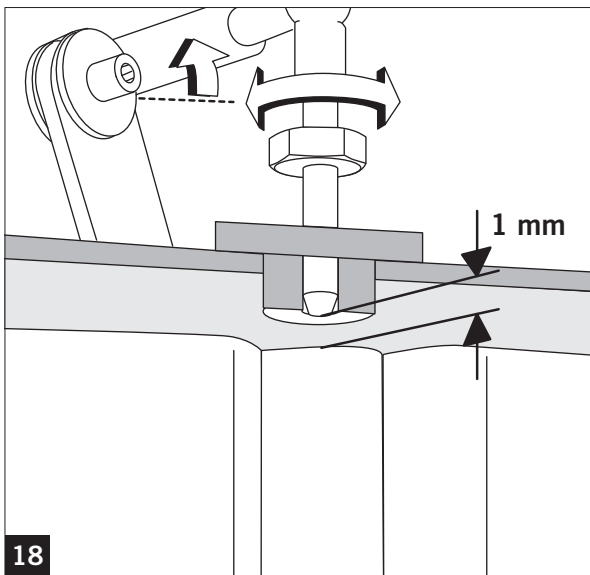
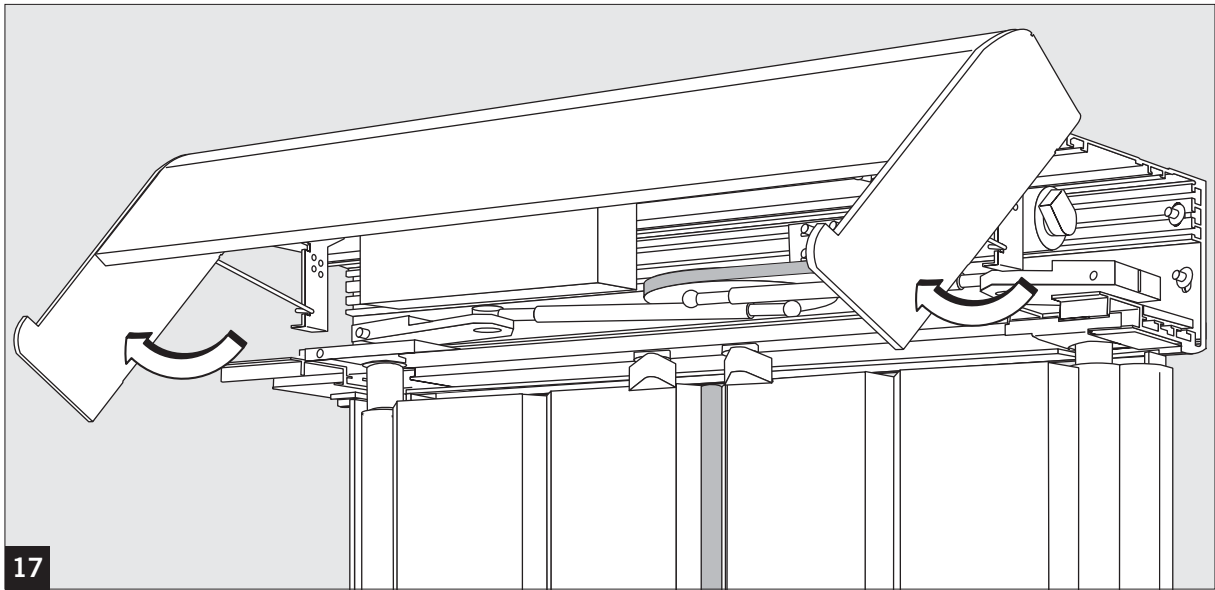


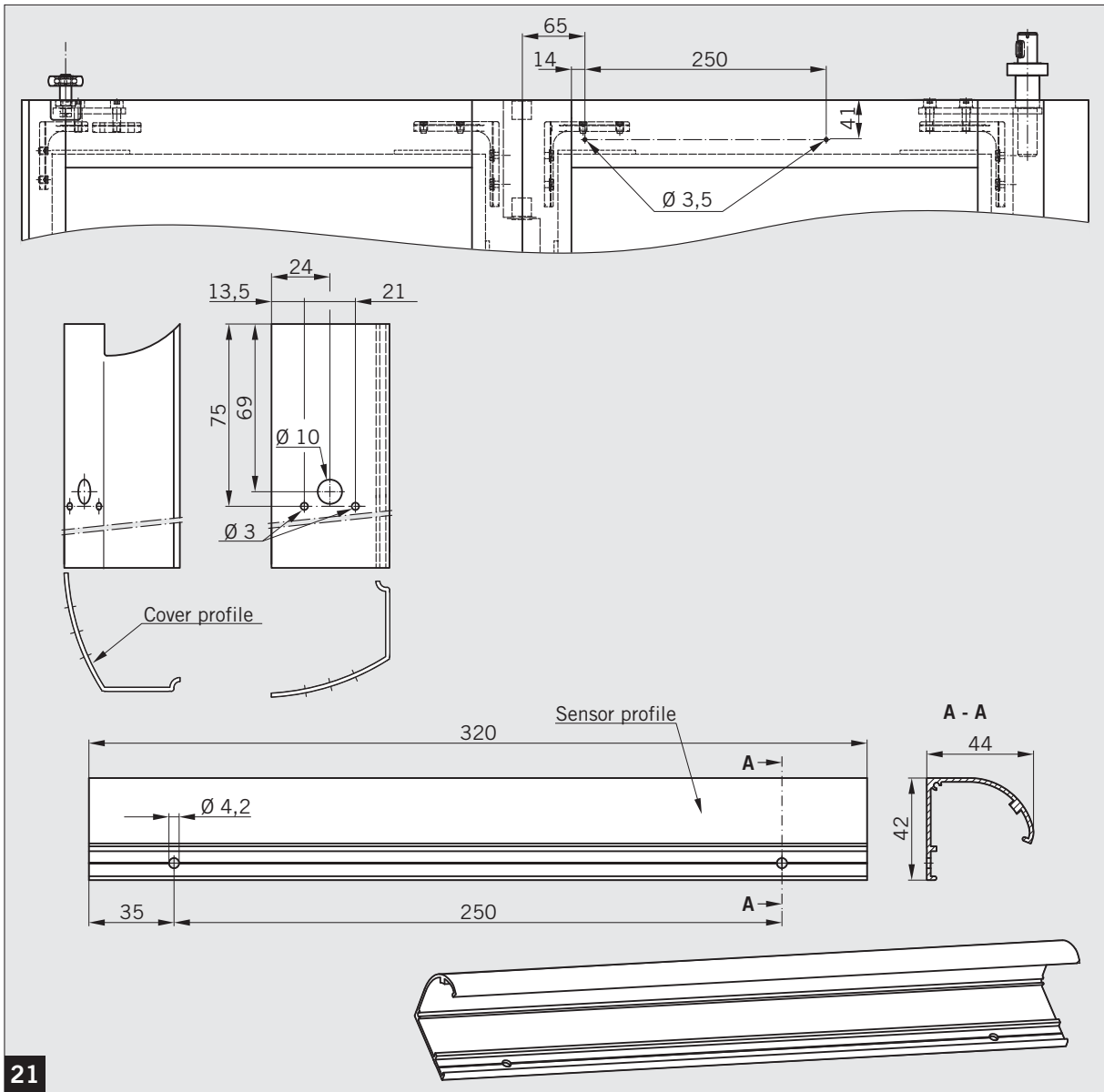
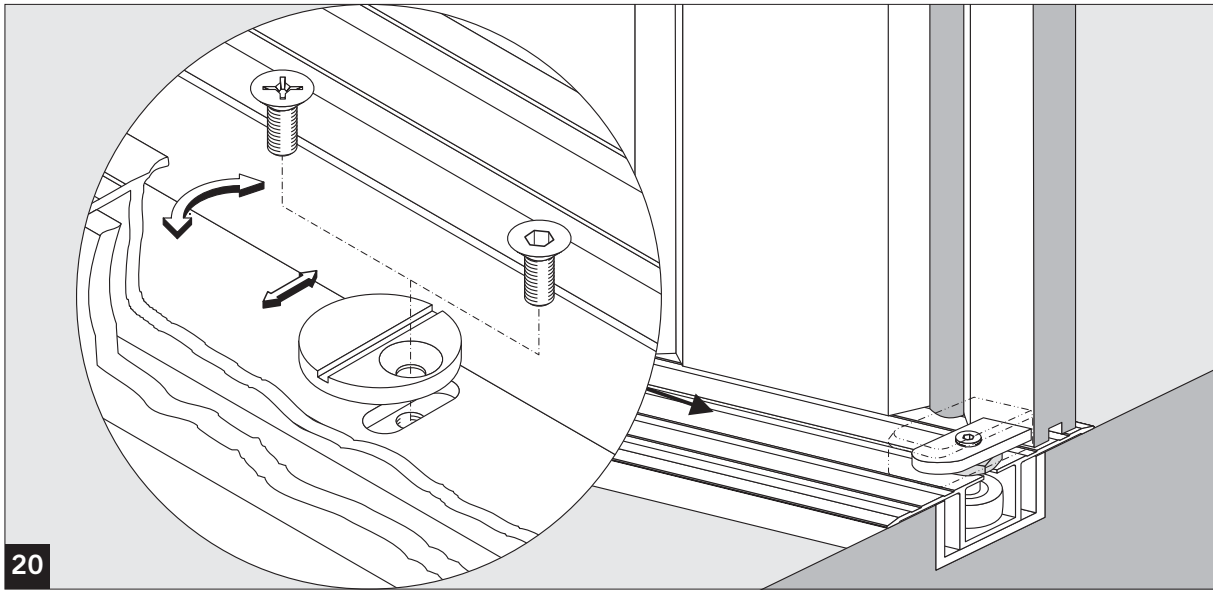


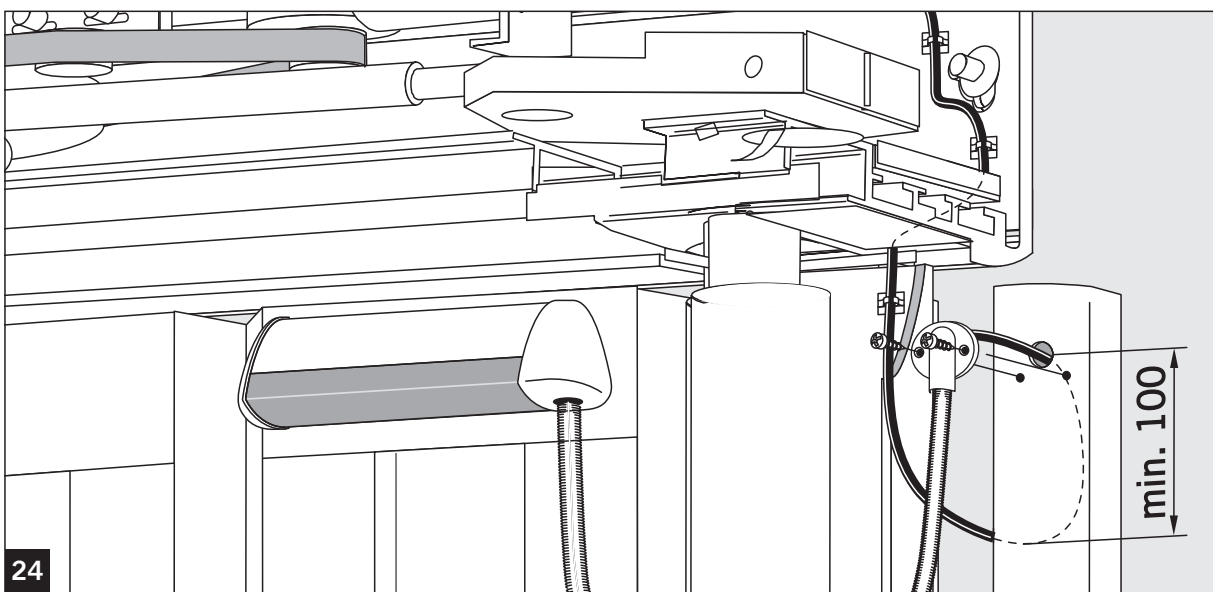
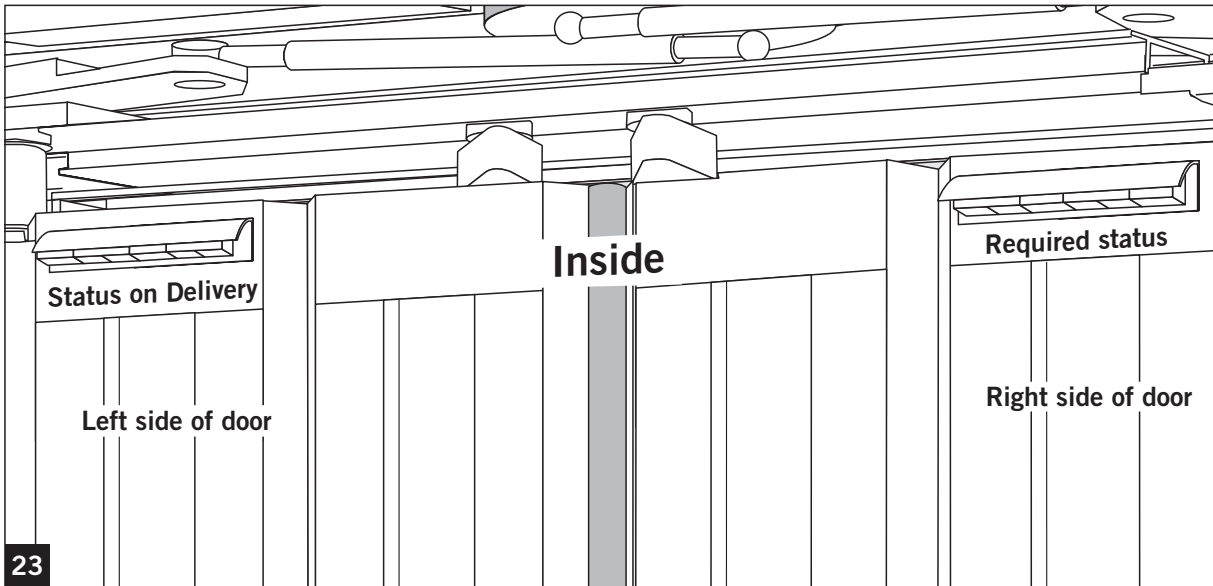
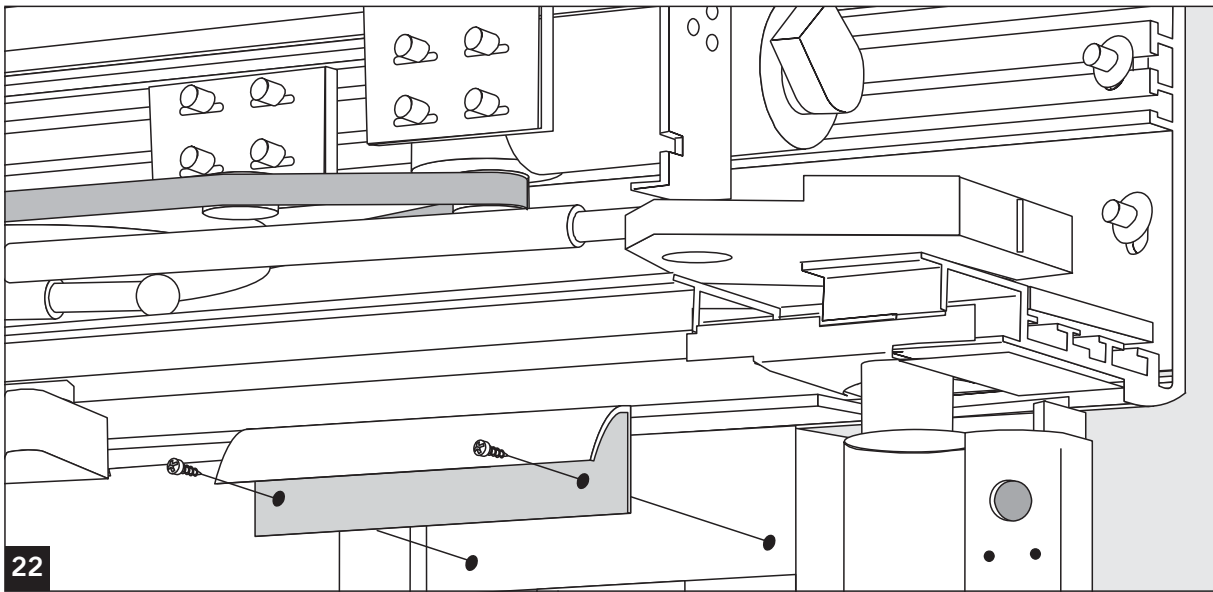


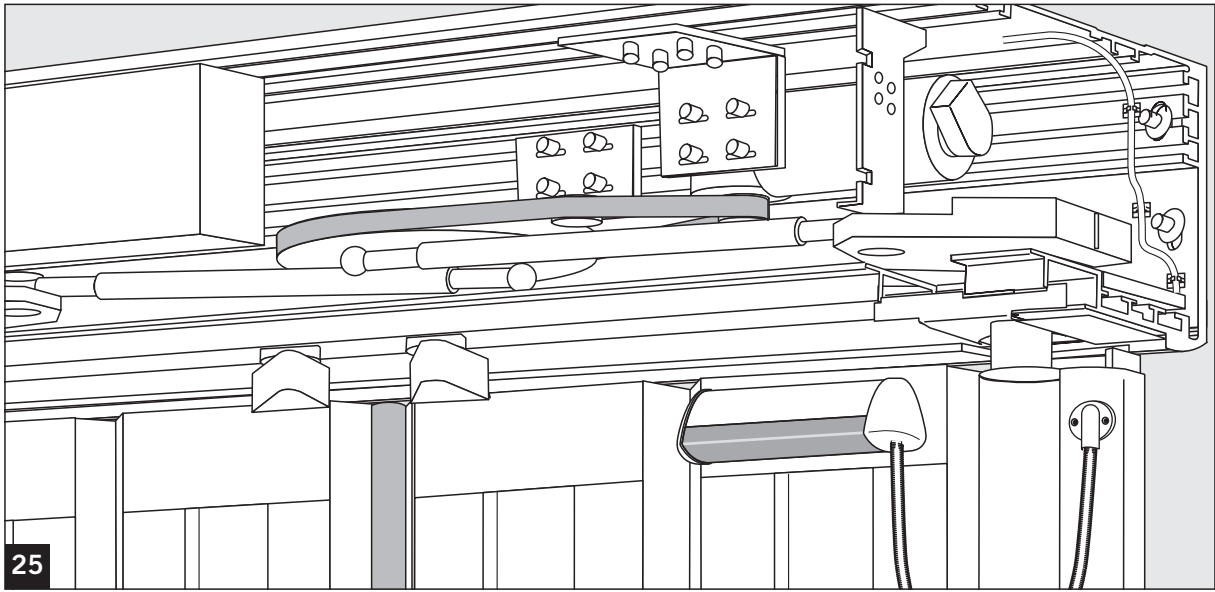












Mounting instructions

Requirements

The electrical installation work must be realised by others.

The power supply is protected with a 10 A fuse.

0 Overview

1 Preparations

Bolt the vertical profiles (U-shaped wall connection profiles) to the operator.



The vertical profiles are stamped as follows:

R = right vertical profile L = left vertical profile

Mounting

2 Position the operator with the bolted vertical profiles vertically against the wall and align it properly. Use the green wooden blocks to provide a floor clearance of 3 mm.

1. Fix the operator provisionally with two screws (on each side) through the oblong holes.
2. Align the complete assembly horizontally and vertically on all sides.
3. Drill the required holes to fix the vertical profiles to the wall.
4. Firmly bolt the operator and the vertical profiles to the wall.

Remove the transportation safety devices from the arm assembly.

3 Remove the bearing flange: To detach the bearing flange, relax the fixing screws connecting the bearing flange to the vertical profile and also the four fasteners of the bearing flange in the transom. Push the outer one of the two inserted steel profiles in the groove of the header profile towards the centre of the door system.



Before mounting, protect the pivot bearing block with adhesive tape to prevent damage to the paint coating.

4 Screw down the bottom pivot bearing block loosely - a few turns will suffice.

5 Inserting the door leaves

1. Shim the bottom pivot bearing block with wooden blocks (7 mm). Attach the door leaf to the bottom pivot bearing block.
2. Insert the door leaf into the operator so that the drive spigot is located inside the transom opening.
3. Slip the bearing flange onto the drive spigot.
4. Fix the bearing flange so that it is flush with the outer edge of the transom.

6 Mounting of top door guide rollers

Slide the guide rollers into the front profile inside the transom and fix them in the provided receptions at the main closing edge with screws. Don't forget the washers!

7 Mounting of cover caps

Clip the plastic covers into the receptions of the guide rollers (from below). If required, tap lightly with a rubber mallet – use wooden block to protect the covers from damage. If your system is equipped with a floor guide rail, also fix the cover caps at the corresponding receptions at the bottom.

8 Align the door leaf and the pivot bearing block; then screw down tight.



Ensure that the leaf-integral pivot tube does not rub against the vertical profile. Slightly adjust the position of the bearing flanges in the operator if required. Before finally tightening the hexagonal bolts of the floor pivot bearing block, secure the floor pivot bearing block in its position in the vertical profile.

9 Fit the opening arm mechanism onto the drive spigots of the door leaves. Fit a suitable number of shim washers (included) onto each spigot to ensure that the drive lever of the arm mechanism is sufficiently clear of the transom profile over its entire operating range.

10 Screw the drive levers of the opening arm mechanism tightly onto the spigots.

11 Adjustment of arm mechanism

Prior to adjustment, forcibly push the door leaves manually several times back and forth to their end stop positions. Then close the door so that it is flush.

Adjustment via adjustment rod/bolt:

In this position, the stop screw (located on the drive belt pulley) has to press against the steel angle bracket. Lock and re-check all connections of the arm mechanism.

12 Relax the hexagonal bolt on the eccentric stop of the drive belt pulley. Open the door leaves. Adjust the desired "open" position using the eccentric stop, and then lock eccentric stop in this position.

Open and close the door leaves and check at the same time if the drive belt pulley rotates to the two stop positions.

13 Mounting of operator covers

Close both recesses for the drive spigots with the provided covers. Remove the protective foil from the hook-and-loop fasteners and insert the covers firmly into the guide roller channel.

14 Fix the light barriers with double-faced adhesive tape onto the light-barrier profiles. Feed the cables through the provided drill holes to the other side of the vertical profiles, and then through the transom opening to the operator.

15 Remove the protective foil from the hook-and-loop fasteners on the vertical profiles, and press them hard against the light barrier profiles. Fix the internal covers accordingly.

16 Connect the cover to the transom profile with the aid of the plastic hinge profiles.

17 Prop open the cover.

18 Locking device (optional)

Adjust the lock bolt so that the clearance at the upper edge of the door is always 1 mm.

Relax counternut, adjust lock bolt and then re-tighten the counternut thoroughly.

19 Emergency manual opening in the event of a power failure

Insert the emergency opening crank (part of scope of delivery) through the drill hole at the centre of the transom and fit it into the drive belt pulley spindle. Turn the emergency opening crank in order to open the door.

20 Floor guide (optional)

Ensure that the door system has been completely mounted.

Relax the floor guide.

Disconnect the arm from the drive lever.

Adjust the height of the roller and tighten the lock nut so that the roller runs over the entire length of the floor guide rail smoothly and without hindrance.

Adjust the floor guide so that the door leaves move smoothly.

To adjust, relax the countersunk screws in the eccentric discs.

Align the floor guide rail by turning the eccentric discs.

Tighten the countersunk screws thoroughly.

 **Remove the adhesive tape from the pivot bearing block after you have finished mounting.**

Mounting of IRS-4-35 (optional for clear passage widths (LW) of or beyond 1400)

21 Drill holes into the outer door leaves and into the cover profiles.


22 Fix the housing of the safety sensor with screws (the picture shows the right door leaf and the respective cover profile, the left side thus has to be realised laterally reversed).

23 **Installation of sensors:**

Left door leaf (looked at from the inside): As delivered.

Right door leaf (looked at from the inside): Modify the sensors so that the DIP-switches are located on the right side. See instructions accompanying the sensors.

24 Fix the linking cable and the cable loop and attach it to the frame structure of with the aid of the clips.

 **The cables must have a length of at least 100 mm inside the covers.**

25 Fix the cables at the operator profile with the respective clips and direct them through the provided cable channel to the control unit. See page 26 for connection diagram.

4. Specifications and functional characteristics

Supply voltage	230 V / 50-60 Hz
Power supply for external accessories	24 V DC / 2 A
Power consumption:	
Max.	360 W
Stand-by	25 W
Average power consumption	45 W/h
Rechargeable battery pack: For emergency opening and unlocking function in the event of a power failure (within 24 hours)	Ni Cd 9,6 V

Program input	GM & EM 4
OFF	●
AUTOMATIC	●
PERMANENT OPEN	●
PARTIAL OPEN *)	●
EXIT ONLY	●

● = yes ○ = no ⊗ = optional

GM = basic module EM = expansion module

*) = Auto-optimisation function, selectable

Specifications and functional characteristics	
Opening width in mm for double-leaf version	800 - 2000
Max. door weight in kg for double-leaf version	2 x 80
German type approval/CE	●

Settings	Adjustment range min.	Adjustment range max.	Original settings
Opening speed			30 %
Closing speed			28 %
Low (creep) speed OPEN			76 %
Low (creep) speed CLOSE	Depends on door-leaf weight	Depends on door-leaf weight	53 %
Deceleration ramp OPEN			0 %
Deceleration ramp CLOSE			20 %
Deceleration ramp REVERSE			50 %
Hold-open time	0 s	180 s	0 %
Hold-open time, Night-/Bank	0 s	10 s	0 %
Delayed opening ,Night-/Bank	0 s	10 s	0 %
Low (creep) speed travel distance OPEN			0 %
Low (creep) speed travel distance CLOSE			0 %
Acceleration OPEN	Depends on door-leaf weight	Depends on door-leaf weight	20 %
Acceleration CLOSE			20 %
Force setting OPEN			100 %
Force setting CLOSE			85 %

5. Commissioning/Adjustment/Functional Testing



Do not take the FFT into operation unless the basic module is equipped with EPROM-version V2.50. An additional jumper has to be installed at expansion module 4 in order to ensure that the control unit recognises the "FFT" door.
(See connection diagram of EM 4, six-pin connector)

Basic requirements

- The operator is properly mounted.
- A jumper has been set on the six-pin connector (see connection diagram of EM 4) so that the system will recognise the FFT system.
- The protective earth conductor (PE) is connected.
- The rechargeable battery pack is plugged in.
- Expansion module EM 4 is connected.
- Separately supplied components such as the program switch, activators and locking devices are installed and connected.

Commissioning

1. Open the door leaves.
2. Set program switch to **OFF**.
3. Unlatch pushbutton for EMERGENCY OPENING function.
4. Press and hold service key.
5. Switch on power supply and wait for approx. 20 seconds (power-on time).
 - The control unit now performs a self-test.
 - The LED light indicator lights up and the door closes at low speed.
6. Release Service key.



If the door does not close, reverse the polarity of the motor connection and repeat step 1 to 6. The system only recognises the modified counting direction of the incremental encoder when the original settings are adjusted.

7. Trigger a Night-/Bank pulse when the door has reached its "closed" position.
 - The system will now perform a learning cycle:
 - The door opens at low (creep) speed to determine its opening width. The opening width is stored while the door is in "open" position.
 - Then the system tests if a locking device has been connected and if so, what kind of locking device. For this purpose, the door opens a short distance and then closes again up to three times.
8. Trigger another Night-/Bank pulse following the learning cycle in order to store the determined parameters while the door is in "open" position.
9. Briefly depress the Service key.
 - The door opens quickly, stores the door parameters and then tests the rechargeable battery pack.

Settings



During commissioning, the forces and speeds in opening and closing direction have to be adjusted, measured and documented in accordance with DIN 18650. These forces furthermore have to be checked in accordance with DIN 18650 during every maintenance and/or safety check - the system requires readjustment whenever these values have changed.

Expansion module 4 (EM 4)

The control unit is preset so that it is optimised for the most frequent types of application.

If you should require another setting, perform the adjustments using the hand-held terminal (HT).

(See operating instructions of hand-held terminal)

Reset to original settings

1. Switch on power supply.
2. Press and hold the Service key until the door starts a closing cycle.

Adjustment of partial open width (opening width in Partial Open mode)

The partial open width is individually adjustable with the aid of the program switch.

Set program switch to **PERMANENT OPEN**:

- The door opens at low (creep) speed.

As soon as the door has reached the desired opening width, set the program switch to **PARTIAL OPEN** position.

- The door stops and the adjusted opening width is now stored as partial open width.

Functional testing

Activators

Check all connected activators in the different program switch positions.

The various settings and adjustments are described in the relevant installation instructions.

EMERGENCY OPENING

1. Set program switch to **AUTOMATIC**.
2. Activate the pushbutton for the **EMERGENCY OPENING** function while the door performs a closing cycle.
 - The door opens at low (creep) speed.

Light curtain

1. Interrupt the light curtain during the closing cycle.
 - The respective LED on the expansion module lights up and the door reverses.
2. Interrupt the light curtain for several seconds while the door is open.
 - The door will remain open for as long as the light curtain is interrupted.
 - As soon as the light curtain is no longer interrupted, the door will close on expiry of the adjusted hold-open time.

Locking device (optional)

The door is locked in "closed" position as long as the program switch is adjusted to **OFF**.

In all other program switch settings, the door remains unlocked.

Night-/Bank activator

Set program switch to **OFF**.

Trigger an opening pulse via the Night-/Bank activator.

- The door unlocks and opens.
- The door closes and locks after the user has left the door or, at the latest, on expiry of the adjusted Night-/Bank hold-open time.

Activators

Check all connected activators in the different program switch positions. Please consider the respective installation instructions for the adjustment of the activators.

Emergency opening

Set program switch to **OFF** and remove mains plug:

- The locking device must not unlock, the door must not open.

Set program switch to **AUTOMATIC**:

- The door unlocks and opens.

Re-connect mains plug:

- The door closes at low (creep) speed.

Leave program switch in **AUTOMATIC** mode and remove mains plug:

- The door opens.

Briefing

Following successful commissioning and functional testing of the door system, the operating instructions are to be handed over to the facility operator/customer and a briefing has to be made.

6. Functions display

Basic module

Following activation of the power supply, the power supply unit requires approximately five seconds to become active. Then the LED lights up.

LED indicator	Status	Function
●	Standard operation	Standard operation – mains power on
○	Off	Control unit does not receive mains power
☀	Flashing (2 Hz)	Learning cycle – parameters are being stored

● = LED on ○ = LED off ☀ = LED blinks

Expansion module

LED 1 and LED 2 indicate that the light curtain is interrupted.
The LEDs light up before each closing cycle to indicate that the light barriers are being tested.

7. Troubleshooting instructions

Please also consider the Commissioning/Adjustment /Functional Testing instructions.

If a malfunction occurs during the commissioning or the operation of the door system, please check the following points:

- Power supply available?
- Pushbutton for EMERGENCY OPENING function unlatched?
- Program switch properly adjusted?
- Sensors unobstructed?
- Door blocked by obstructions?
- Do the door leaves run smoothly (counter rollers, floor guide rail)?
- Fuse OK?
- All external activators, pushbuttons for EMERGENCY OPENING function, program switches and locking devices correctly wired?
- All plug connections firm?
- Correct door type? Use hand-held terminal to check if the correct door type has been adjusted.

**In case the malfunction has not been removed, use hand-held terminal (HT) for fault analysis.
The following table provides further assistance to remove the malfunction.**

Malfunctions	Possible reason	Remedy
The door runs jerkily and out of control	Incremental encoder cable or connector	Connect the plug properly or replace the cable
	Incremental encoder mode	Check incremental encoder mode with HT 0 = Incremental encoder at pulley 1 = incremental encoder at motor
The door remains open after one of its 4-hourly self-tests	Rechargeable battery pack is not fully loaded or empty	Measure voltage of rechargeable battery pack Check number of operating hours with the aid of the HT Replace rechargeable battery pack
The door remains open in all program switch positions	Sensors	Check sensors with the aid of the LEDs on the EM or using the HT
	Pushbutton for EMERGENCY OPENING function	Bridge the inputs at the connector In case this removes the malfunction, check the pushbutton for the EMERGENCY OPENING function (with the HT) and replace it if required
The door does not open when the program switch is adjusted to EXIT ONLY and PARTIAL OPEN	INTERNAL/EXTERNAL activator	Remove connector of activator and bridge the input. If this removes the malfunction, check 24 V supply voltage. If OK, check and replace activator as required.
The door opens while the program switch is adjusted to OFF	Micro-switch for "monitoring of locking device/locking status" (optional)	Adjust or replace micro-switch
The door stands open (service display is off)	Short-circuit	Remove short-circuit Disconnect control unit from power supply and reconnect after approx. 10 seconds.
How does the control unit respond to short-circuits? The 24 V supply voltage for radar motion detectors and locking devices is short-circuit proof. In the event of a short circuit, the power supply unit switches all secondary voltage supplies off and the light indicator goes out. The power supply unit does not automatically switch on again once the short-circuit has been removed! Remove mains plug and reconnect it after approx. 10 seconds.		
Error display of hand-held terminal: The testing of the rechargeable battery pack cannot be switched off at the hand-held terminal (Adjustment: RECHARGEABLE BATTERY PACK TEST – NO is not possible)	No jumper at EM 4	Set jumper Hand-held terminal: Adjust testing of rechargeable battery pack to NO
PACK TEST – NO is not possible). Error display of hand-held terminal: The hand-held terminal can be adjusted to: RECHARGEABLE BATTERY PACK TEST – NO but the system still performs the test	No power reset has been performed	Remove mains plug and reconnect it after approx. 10 seconds
Power failure: Stored settings are deleted following a power failure.	The adjusted settings have not been stored	Adjust settings while the door is open or trigger an opening pulse after you have adjusted the program switch (so that door moves to "open" position)
	The system has been reset to original settings	Readjust driving parameters and settings.
Error display of hand-held terminal: Error 6 – faulty force adjustment	The force limitation adjustment is too low	Check adjusted value with hand-held terminal: Original settings = Force limitation in CLOSING direction – 31 % Force limitation in OPENING direction – 40 %
Locking device: The door does not lock	An incorrect locking type has been determined during the learning cycle	Check adjusted value with hand-held terminal Perform learning cycle while program switch is adjusted to OFF
Learning cycle: The door does not perform a learning cycle	The parameter setting is not suitable for the prevailing application	Reset system to original settings: 1. Set program switch to OFF 2. Connect hand-held terminal 3. Plug in mains plug and wait for approx. 10 seconds 4. Press and hold Service key for approx. 2 seconds 5. Adjust door type (FFT/FST/E) at hand-held terminal 6. Unlatch pushbutton for EMERGENCY OPENING function 7. Trigger a Night-/Bank pulse

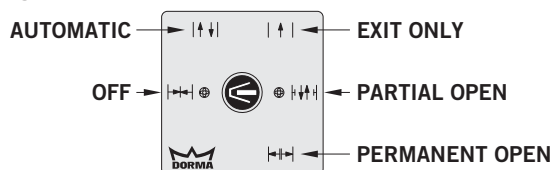
8. Operating instructions

1. Program switch

The program switch (to switch on the system) is either located at the bottom of the internal operator cover or, in case the system is equipped with an external program switch, in the close range of the door system.

In order to take the system into operation, you have to unlatch the green pushbutton for the EMERGENCY OPENING function (by turning the knob). As a rule, this pushbutton is located next to the program switch.

You may select the following functions with the aid of the program switch:



Program switch in position:

OFF The system is switched off.

The door is locked electromechanically whenever the system is equipped with a locking device.

AUTOMATIC The door opens whenever an activator is triggered, closes automatically on expiry of the adjusted hold-open time and is accessible from the inside and the outside. The hold-open time can be adjusted with the aid of the hand-held terminal.

EXIT ONLY The external activator is deactivated, thus the door is only accessible from the inside (for example one-way function at closing time). When a person or an object enters the detection range of the internal sensor, the door opens until it has reached its full opening width and closes on expiry of the adjusted hold-open time.

PERMANENT OPEN The door opens and remains in this position until another function (e. g. summer operation/cleaning purposes) is adjusted.

PARTIAL OPEN The door system operates as described under **AUTOMATIC**; you may however variably adjust* the reduced opening width (e. g. for winter operation).

* Programming the partial opening width

The opening width in Partial Open mode is individually adjustable with the aid of the program switch:

- Set program switch to **PERMANENT OPEN**
 - The door opens at low (creep) speed
- As soon as the door has reached the desired opening width, set the program switch to **PARTIAL OPEN** position.
 - The door stops and the operator stores the adjusted "partial open width".

2. EMERGENCY OPENING

While the program switch is adjusted to **AUTOMATIC**, **PARTIAL OPEN** and **EXIT ONLY**, the door opens with the aid of the rechargeable battery pack whenever the pushbutton for the EMERGENCY OPENING function is activated.

3. Night-/Bank activator (optional)

While the program switch is adjusted to **OFF**:

The door is accessible from the outside when an opening pulse is triggered at an external activator. The door closes and locks as soon as the user has left the door, or, at the latest, on expiry of the adjusted Night-/Bank hold-open time.

If a KT 8 key switch is installed and used as activator, the door may be locked without power supply.

- Close the door by hand
- Turn the key switch anticlockwise
 - The door locks

4. Restart following a power failure

Following a power failure, the control unit initially performs a self-test for safety reasons.

Consequently a start-up time of approx. 10 seconds is required. On expiry of this time, the door closes at low (creep) speed and resumes operation in the previously adjusted operating mode.

5. EMERGENCY OPENING in the event of a power failure (optional)

While the program switch is adjusted to **OFF**:

- Unlock the door manually

While the program switch is adjusted to **AUTOMATIC**, **PARTIAL OPEN** and **EXIT ONLY**:

- The system automatically performs the EMERGENCY OPENING.

6. Closing on power failure

- Set program switch to **OFF**.
- Close the door by hand
- Lock the door either manually from the inside or from the outside via the KT 8 key switch.

7. Safety functions

7.1 Self-test of door system

- Every four hours, or at staggered intervals following the start-up of the door system, the control unit performs a self-test. During this test, the control unit and the EMERGENCY OPENING function (with rechargeable battery pack) are tested.
 - The door will remain open if the self-test fails.
 - You may however close the door by setting the program switch to **OFF**.
 - The door will perform another self-test as soon as the next opening pulse is triggered.
 - In addition, the light curtains are automatically tested prior to each closing cycle.
 - The door system has to be inspected by a maintenance engineer in case this test fails.

7.2 Light curtain

The closing range between the open door leaves is monitored by light curtains. In case the sensors recognise a person or an obstruction within their detection range:

During a closing cycle:

- The door reverses to opening direction.

While the door is open:

- The door remains open.
 - As soon as the detection range is free from obstructions, the door will close on expiry of the adjusted hold-open time.

7.3 Monitoring of opening and closing force

If the door leaves run into an obstruction during a closing cycle, the door reverses in opening direction and then, on expiry of the adjusted hold-open time, resumes its closing cycle at low (creep) speed.

If the door leaves run into an obstruction during an opening cycle, the door will stop.

After approx. 10 seconds, the door will once more try to perform an opening cycle at low (creep) speed.

If the obstruction has not been removed, the door will stop again.

After a total of eight attempts, the door closes.

The door will perform the next opening cycle (as soon as the next pulse is triggered) at low (creep) speed.

If the obstruction has been removed, the door will resume operation in the previously adjusted operating mode.

8. Care and maintenance

Before the first commissioning and depending on requirements, however, at least once a year, the door system has to be inspected by a properly qualified technician and serviced if required

(according to BGR* 232 and DIN** 10650-2).

Please consider the inspection book (WN 056963-45532) for further information.

*BGR = German Employer's Liability Insurance Association Rule

**DIN = German Industrial Standard

We would recommend taking out a maintenance agreement with DORMA.

- Set program switch to **OFF** or **PERMANENT OPEN** in order to avoid an undesired movement of the door while cleaning the system.
- You may clean the complete door system (aluminium, glass, cover) with a damp cloth and a standard commercial cleaning agent.
- Keep the floor guide rails clean.

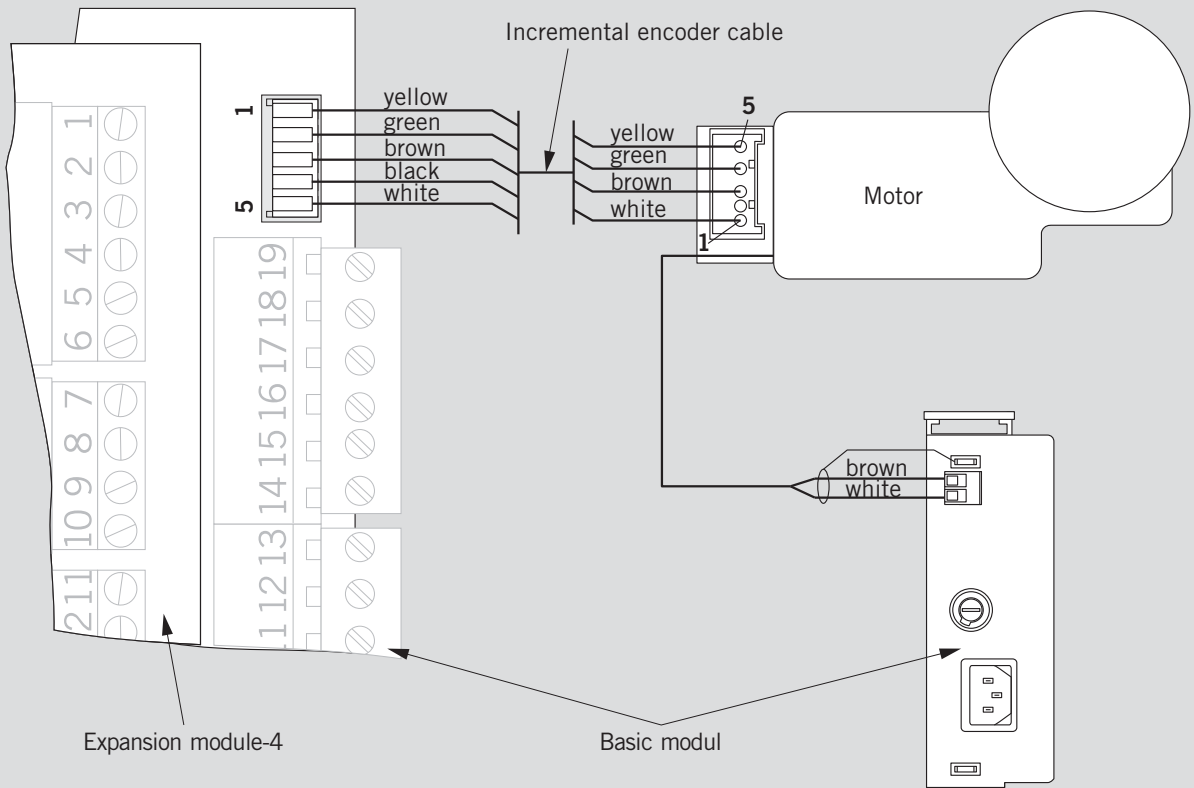
9. Troubleshooting

If the door does not close or open, please check if:

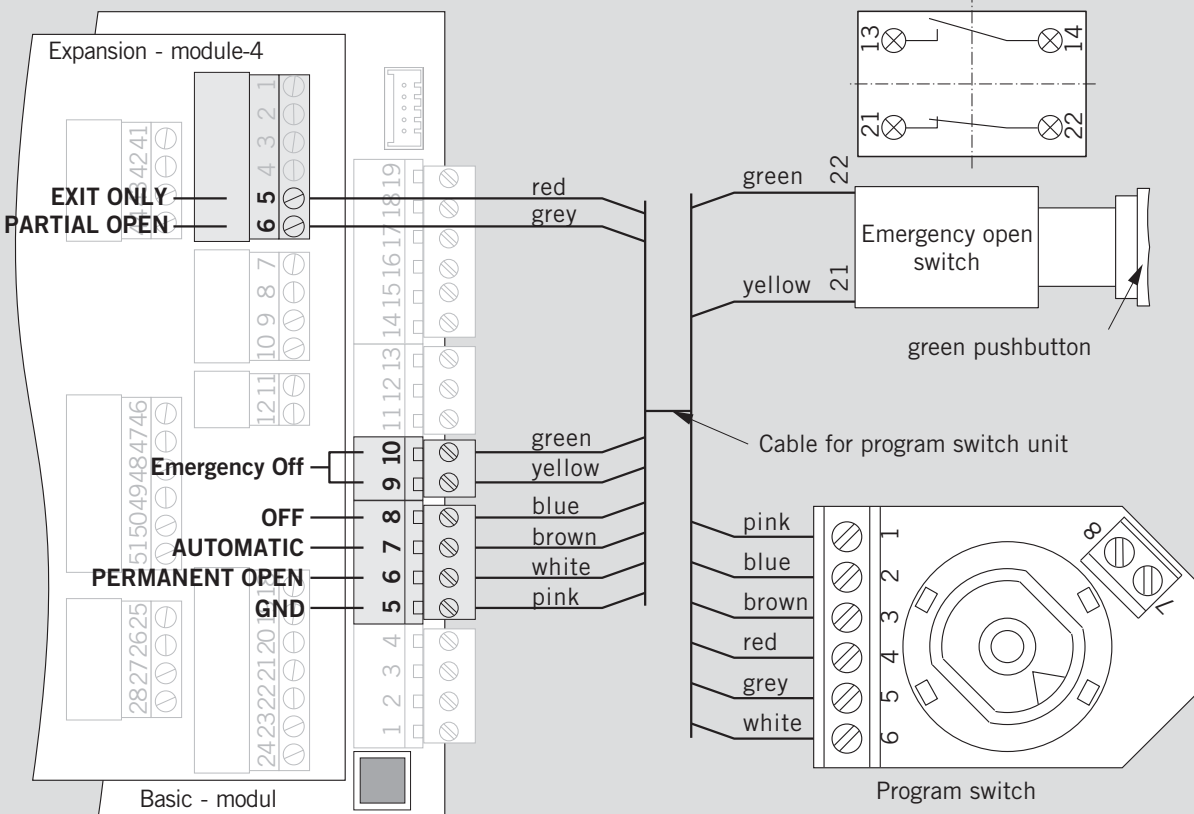
- Power supply available?
- Pushbutton for EMERGENCY OPENING function unlatched?
- Program switch properly adjusted?
- Sensors permanently activated?
- Door blocked by obstructions?

If all above-mentioned points are in order, please call a maintenance engineer.

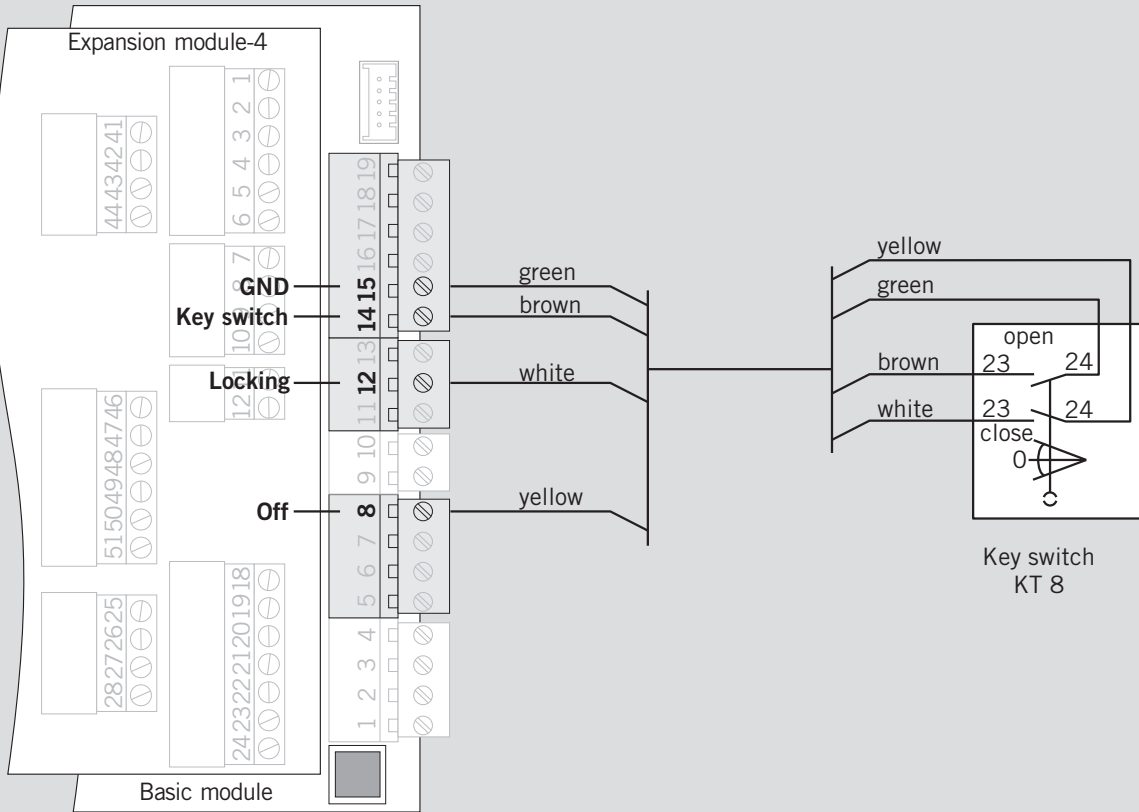
Motor and incremental encoder



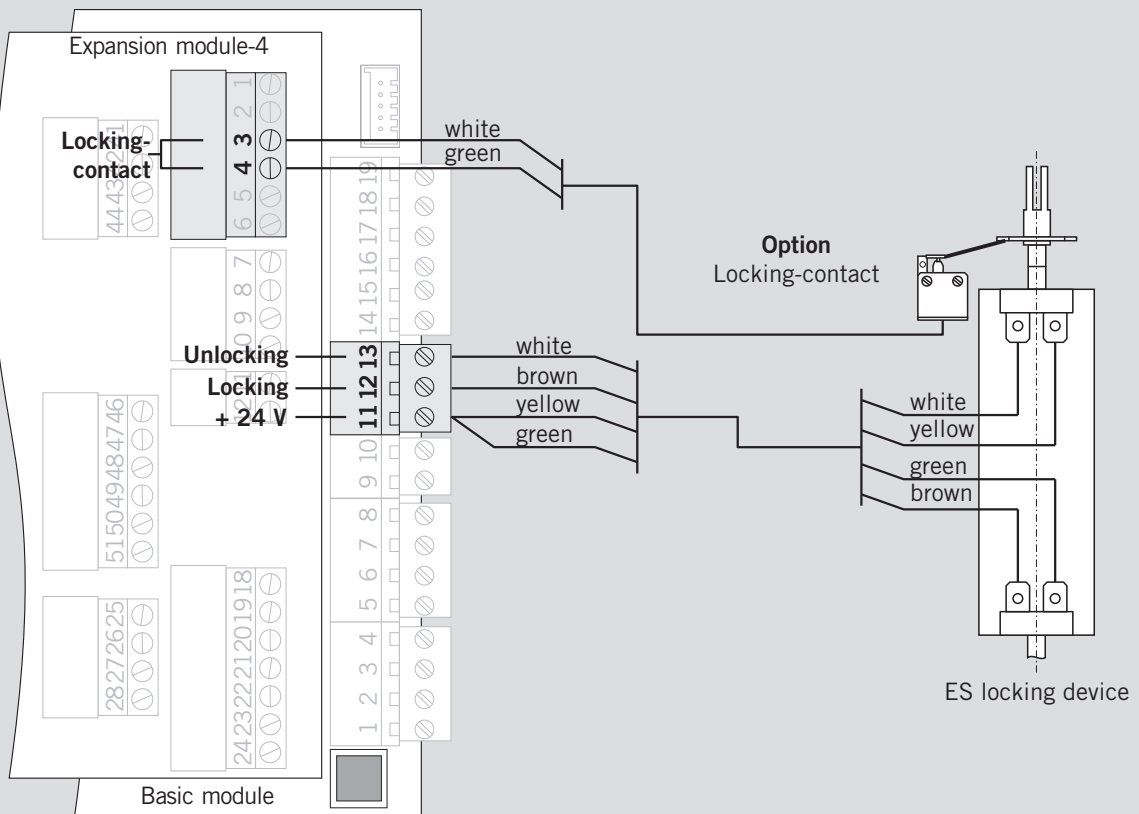
Program switch and Emergency Open switch



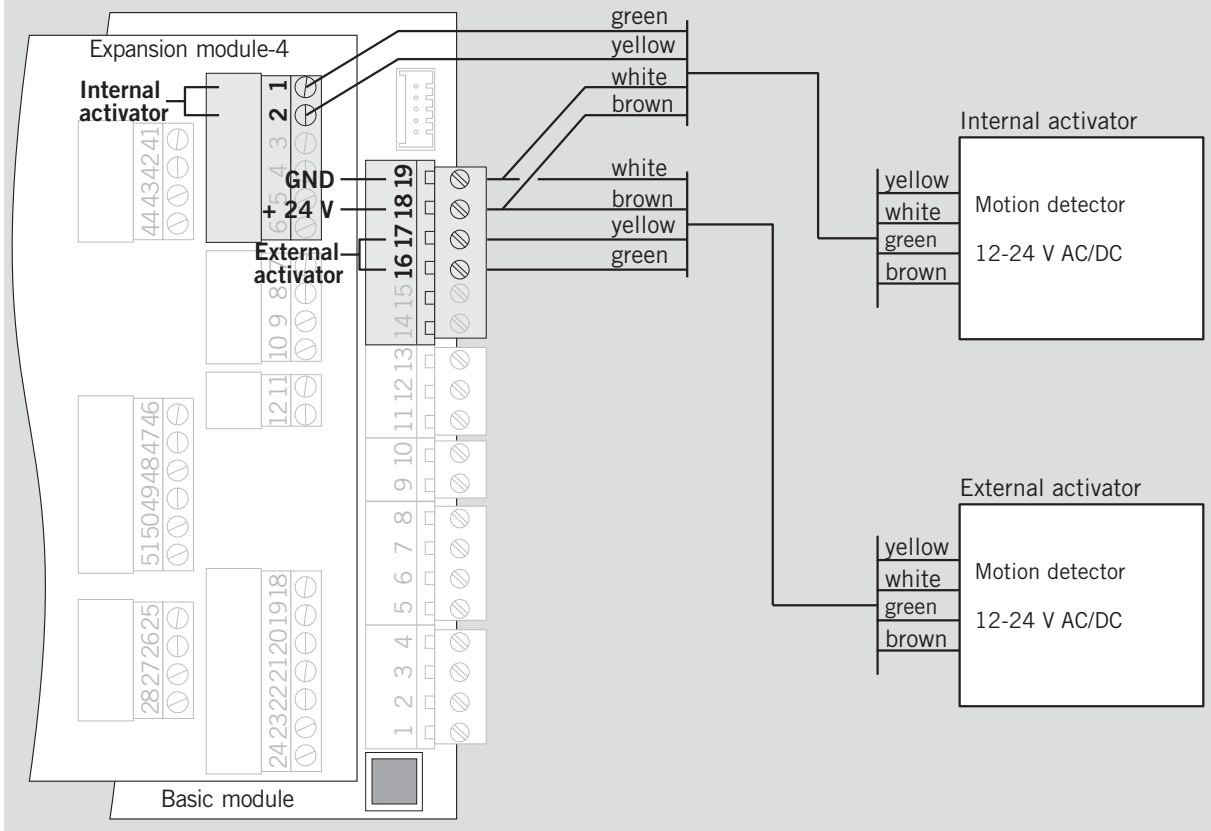
Key switch KT 8



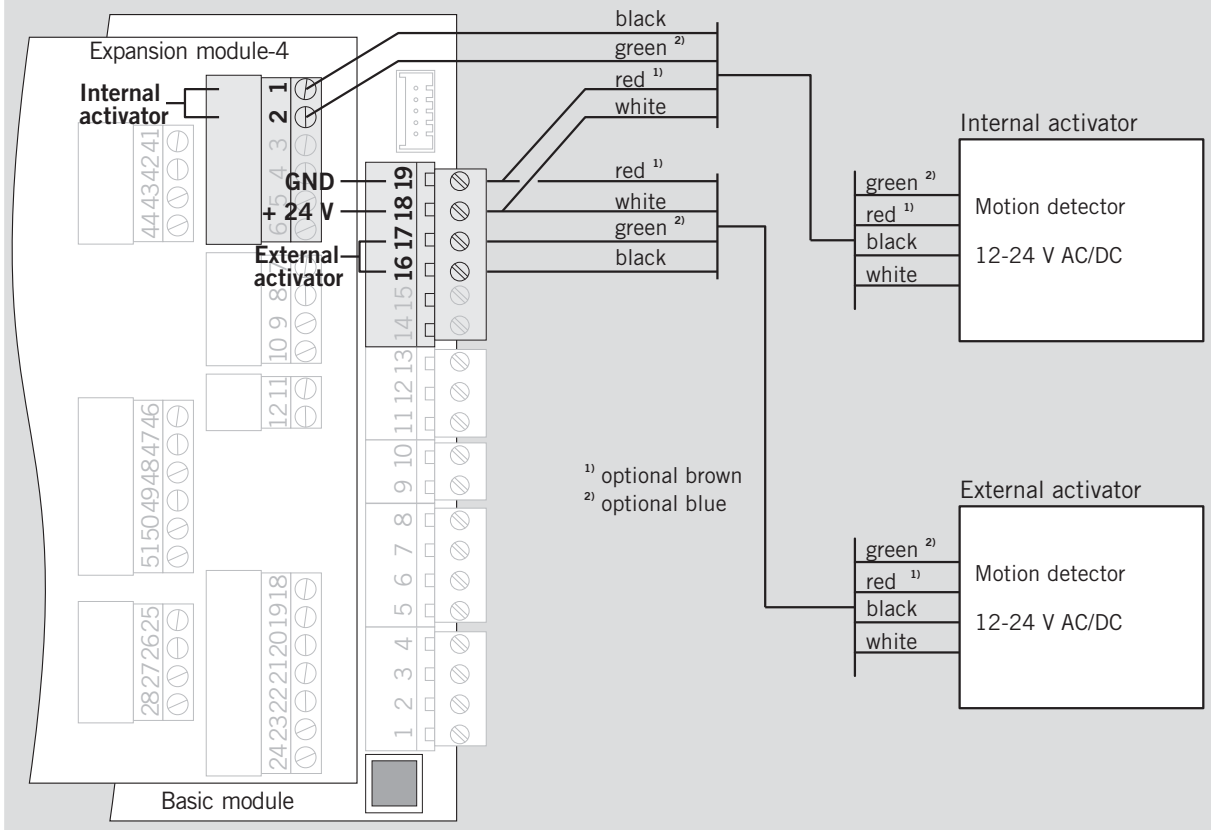
Locking device



Motion detector EAGLE 1, EAGLE 2

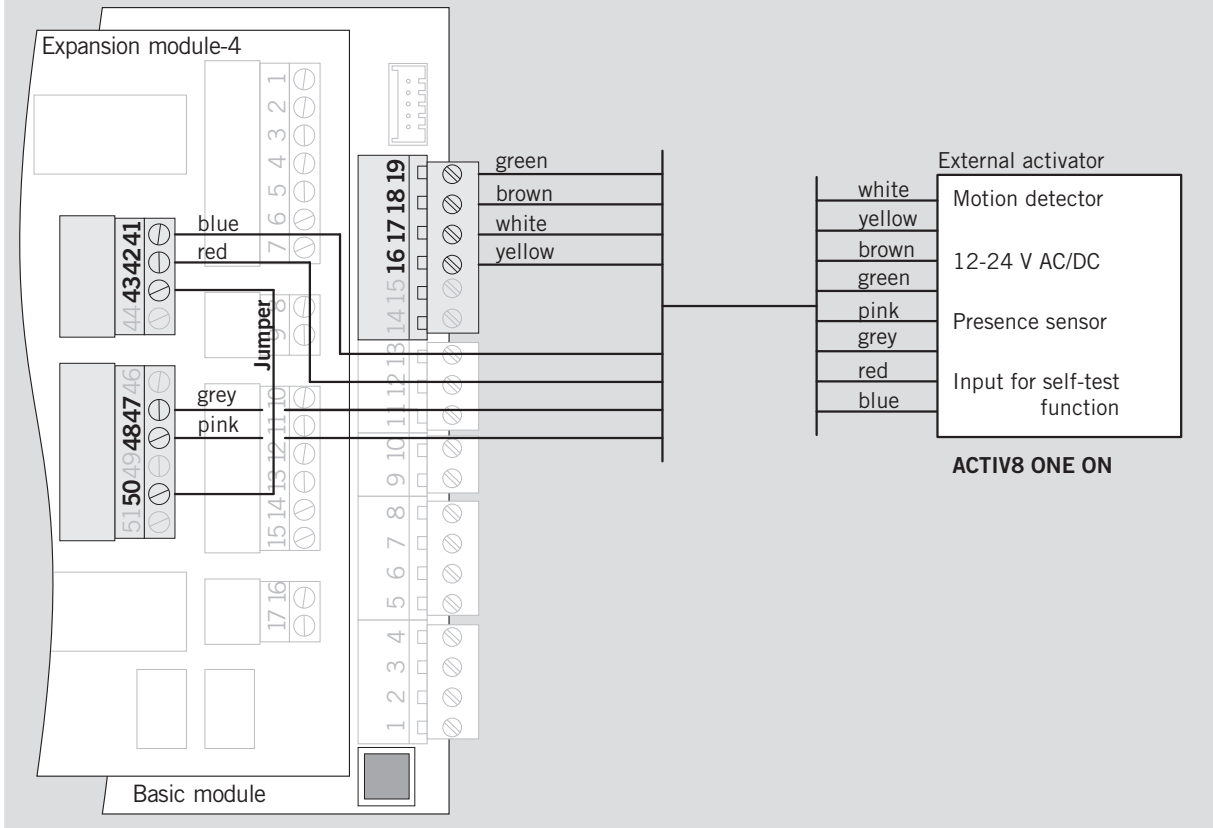


Motion detector Merkur

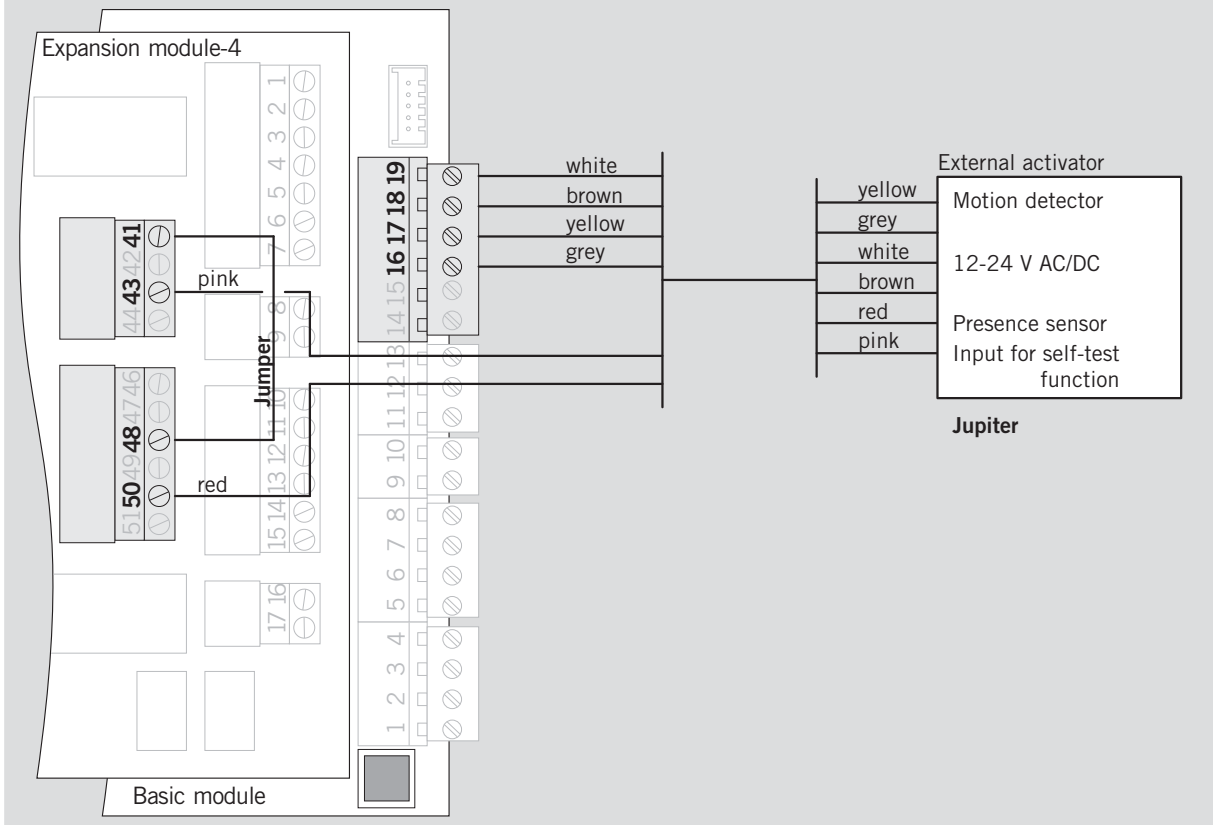




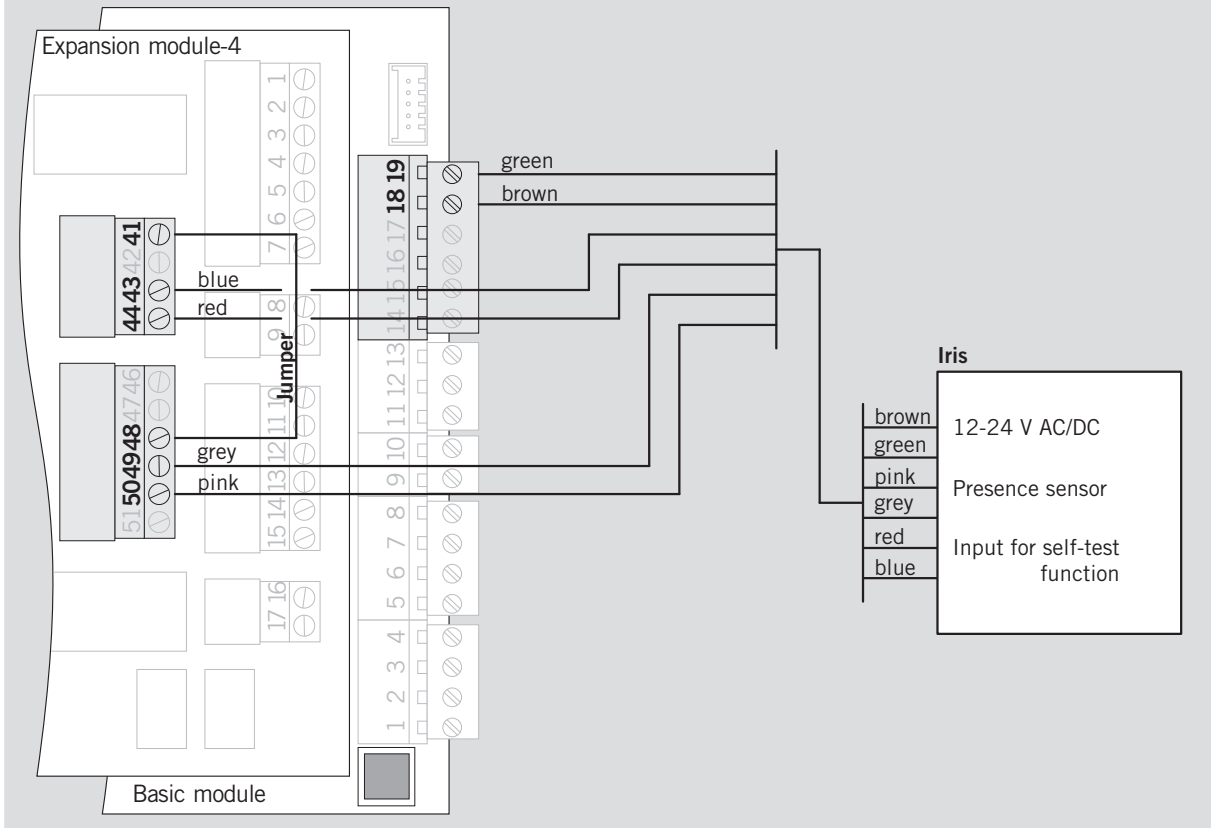
Motion detector Presence sensor Active8 ONE ON



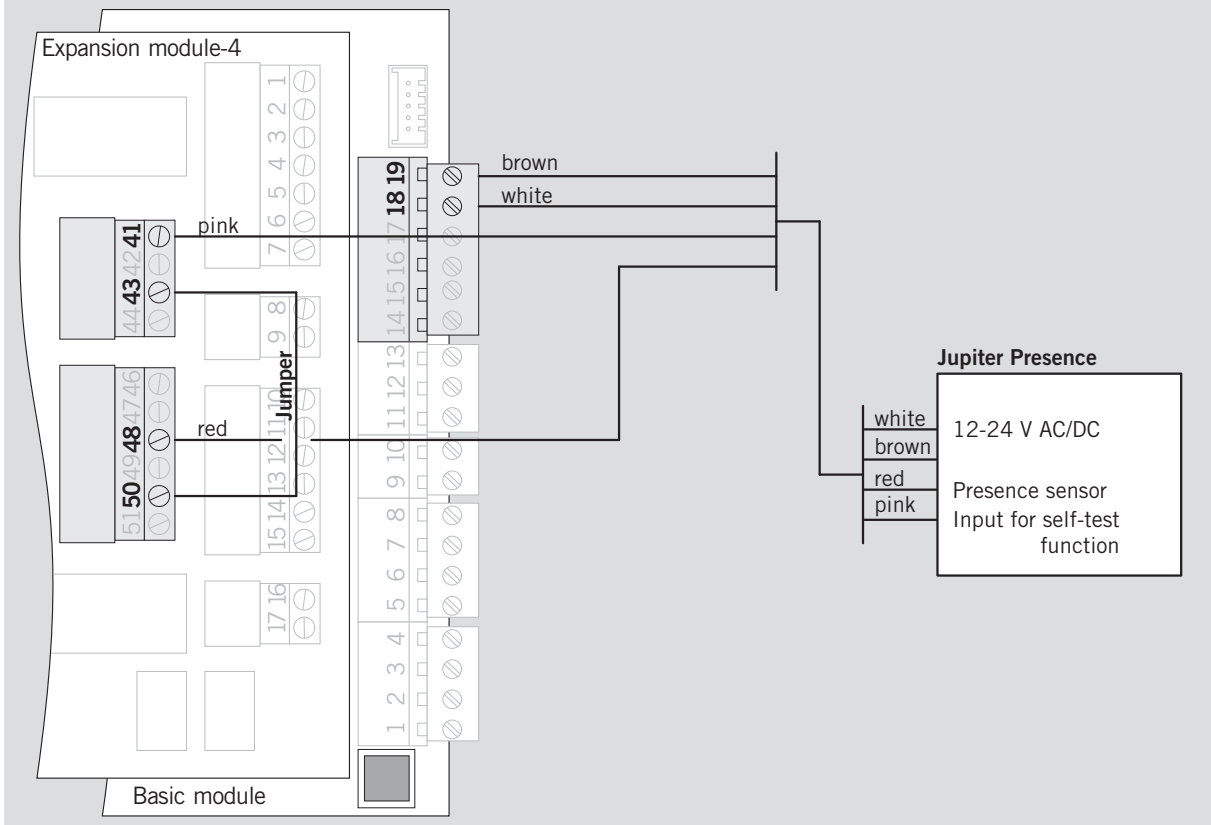
Motion detector Presence sensor Jupiter



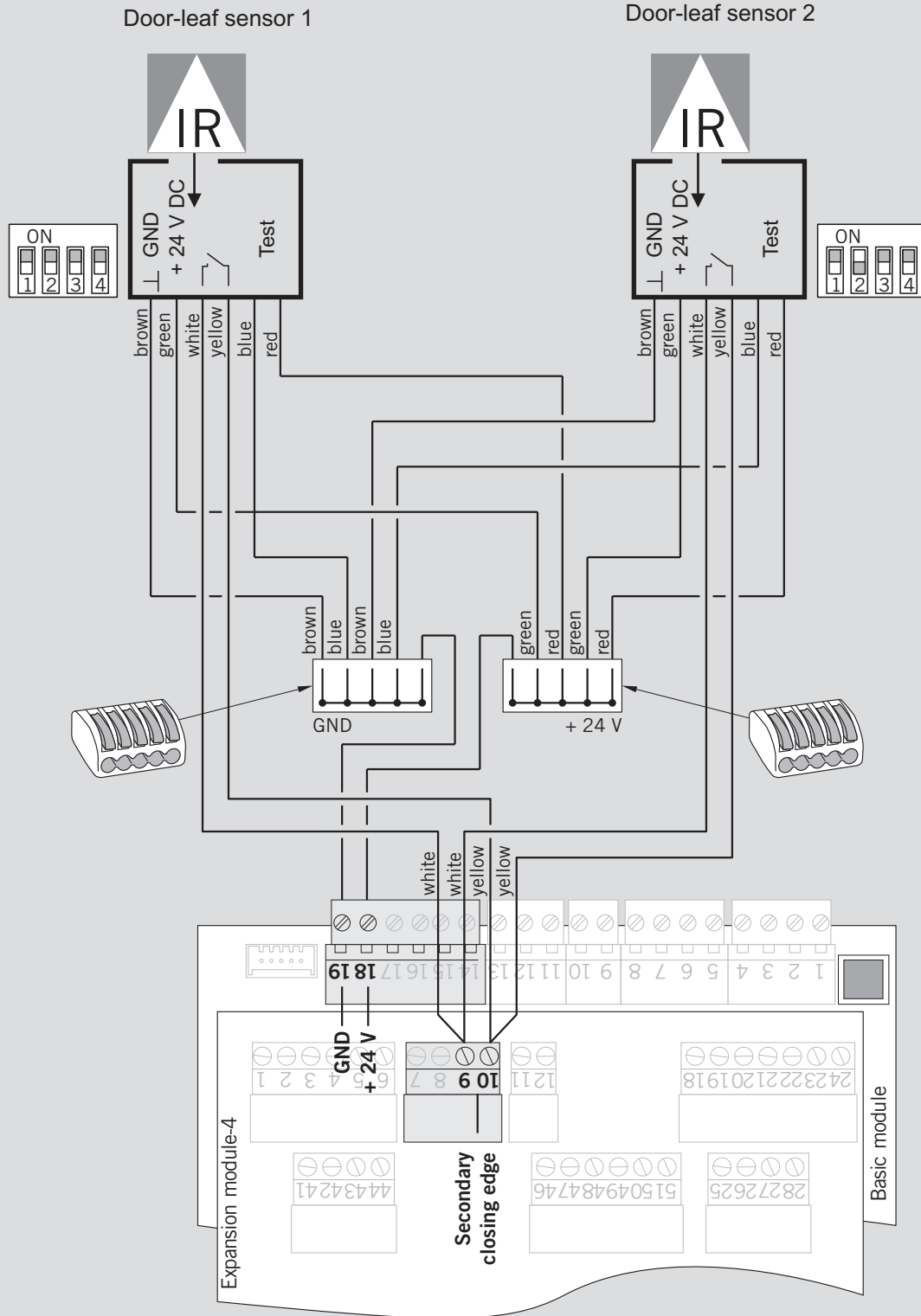
Presence sensor Iris



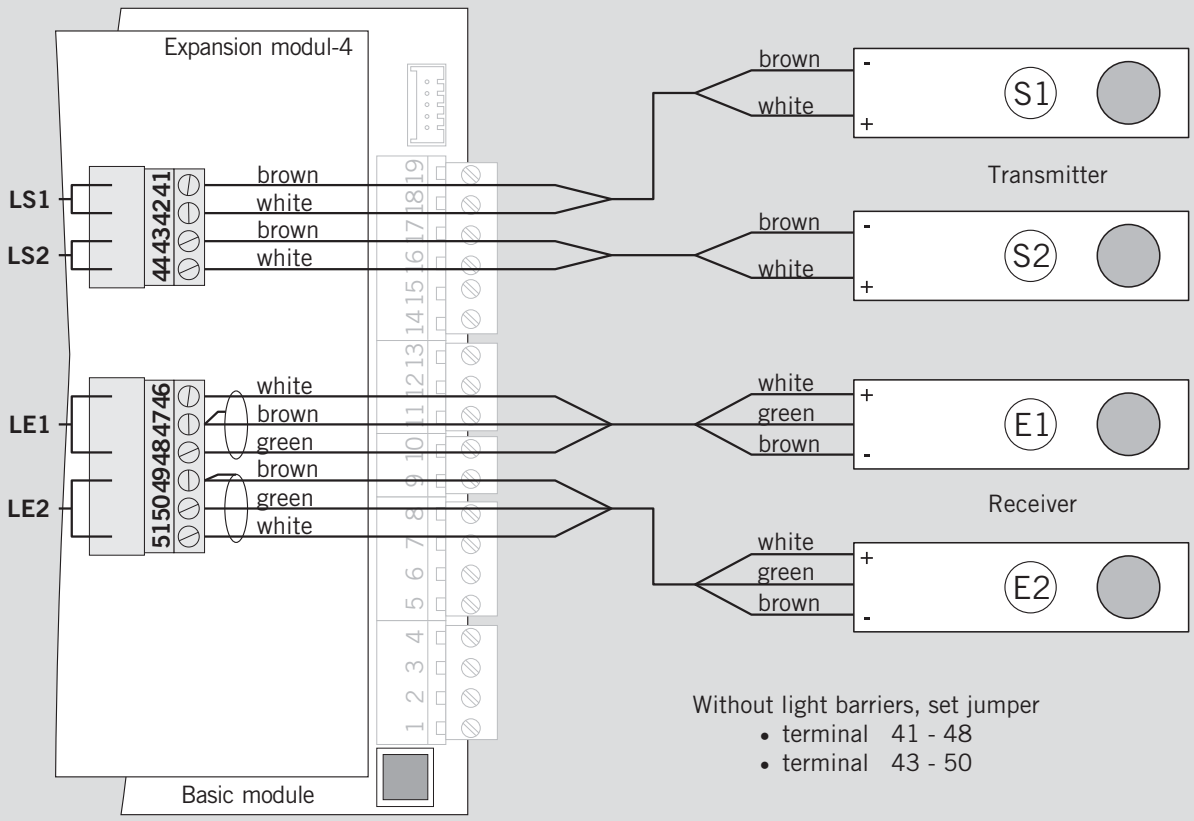
Presence sensor Jupiter Präsenz



Door-leaf sensor IRS 4-35



Light barriers LB 03



Airlock control

