

ECO

Swing door drive units

■ SYSTEM TECHNOLOGY FOR THE DOOR



The convenient high-performance solution: ECO swing door drive units

Automation considerably enhances the user comfort of a traditional, manually-operated door. The flow of pedestrian traffic is increased. Cumbersome, difficult-to-open doors become much easier to use. A motion detector can be used to provide contact-free access. Reliable door closure prevents a loss of valuable heated or cooled air in the building, resulting in large energy savings. The swing-door drive unit supports management functions such as controlled access and fire safety. Movement is monitored by a series of standard and norm compliant safety elements.

Wherever people work, travel, live, are cared for or congregate, there is a need for doors to facilitate their comings and goings. The automation of doors offers smooth access with unobstructed entry and exit. These drive mechanisms are ideal for use in public buildings, hospitals, hotels, airports, and industrial and commercial premises.

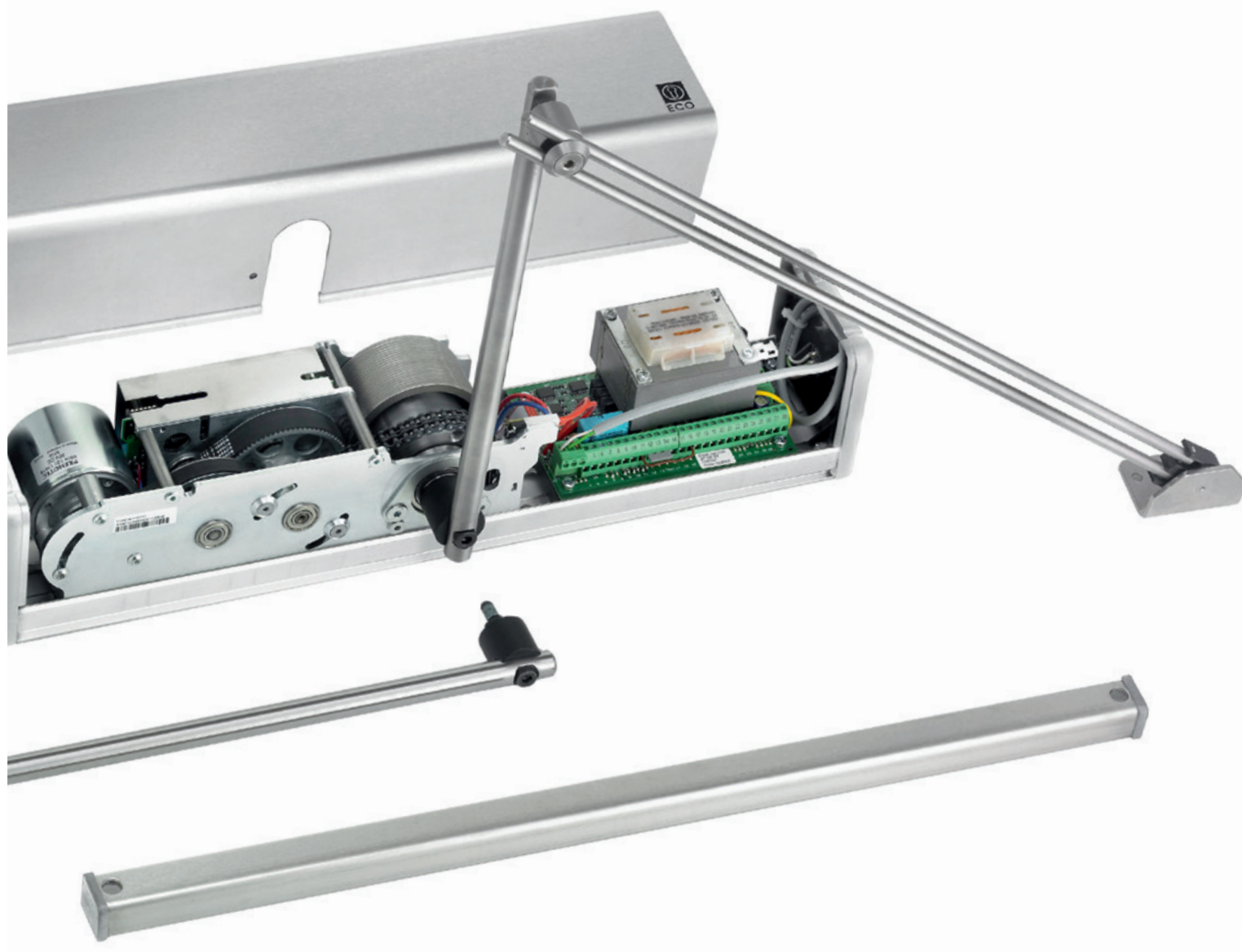


Standards produce safety



It doesn't matter whether it is about the automation of light internal doors, heavy external doors or fireproof doors: ECO swing door drive units provides security at sensitive point where building security is concerned. ECO Schulte is a pioneer of the system concept at the door. That is why the entire ECO Schulte system programme is certified in accordance with the European Norm (EN) and manufactured in accordance with CE specifications. Standardized fittings produce quality and security for the planners and operators of buildings and property - and for the users too, of course.





Safe and reliable opening and closing

Opened by an electric motor - controlled closure via a spring mechanism. The integrated damper unit stops the door from slamming shut. Automated door closure helps keep out airborne dust, wind gusts, odours and noise. If there is a power cut, the door can be closed by means of its spring mechanism from any position. The use of top quality components guarantees optimum performance and extended product life with minimal maintenance.

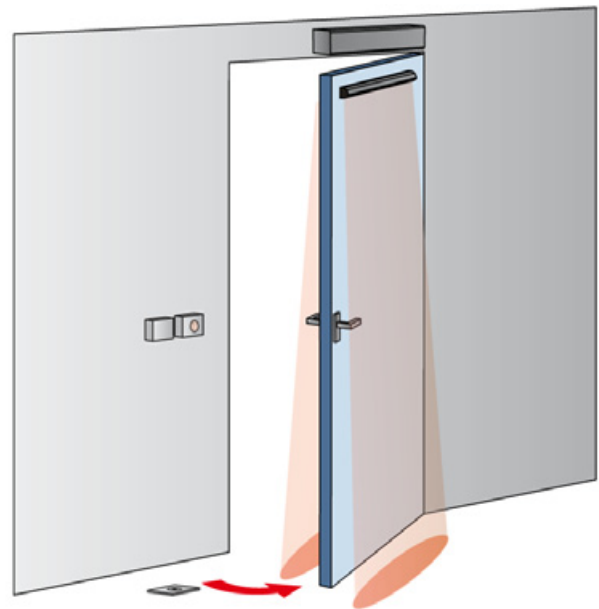
The Choreografie of security

Power is intelligently harnessed in order to monitor the system and provide smooth operation with maximum reliability and security. Safety and security elements can include, depending on the building design, light barriers (photo-electric cells) or light scanners.

Our drive mechanism is designed for the convenient, automatic operation of standard doors, and can be supplied with reliable fire-protection options when used to operate fire-rated doors.

Safety sensors with configurable functions "Reverse" and "Stop" functions offer additional protection at the pinch points and in the event of oncoming traffic.

Infrared sensor strips acc. to DIN 18650!



Infrared sensor strips

11	SL 1100/2	length up to 1.100 mm (can be shortened)
111	SL 1500/3	with 3 sensors, length up to 1.500 mm (can be shortened)

Risk elimination through planning



Together with the customer, ECO Schulte conducts a joint risk assessment (under consideration of the door user group and specific construction situation) in accordance with the standard **DIN 18650** which describes the technical safety requirements for automatic door systems. This then forms the basis for the selection of various safety and security measures. Risk assessment is carried out during the planning phase so that the automatic door system can be installed and operated safely and reliably.



A joint casing for both drive units is available as an optional extra.

ECO FDC / -B

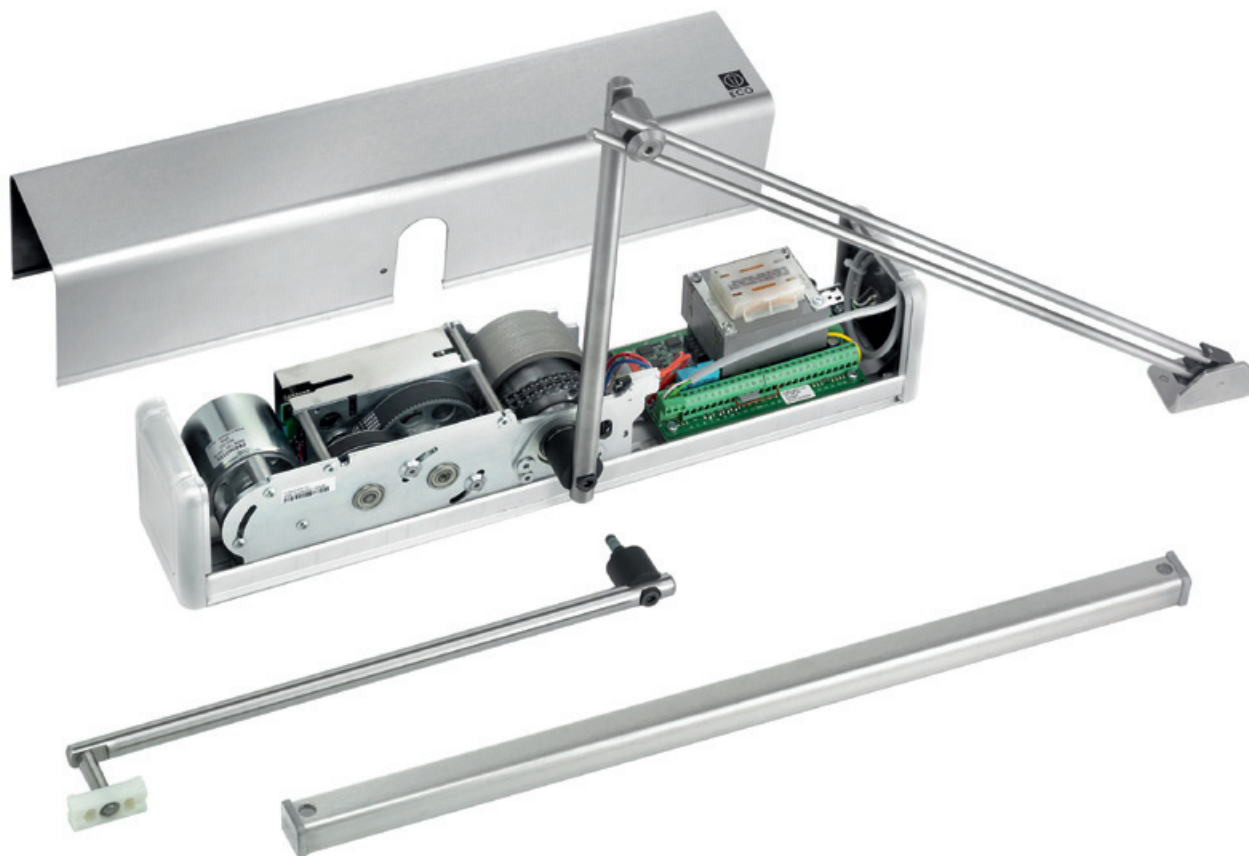
The convenient, high-performance solution.

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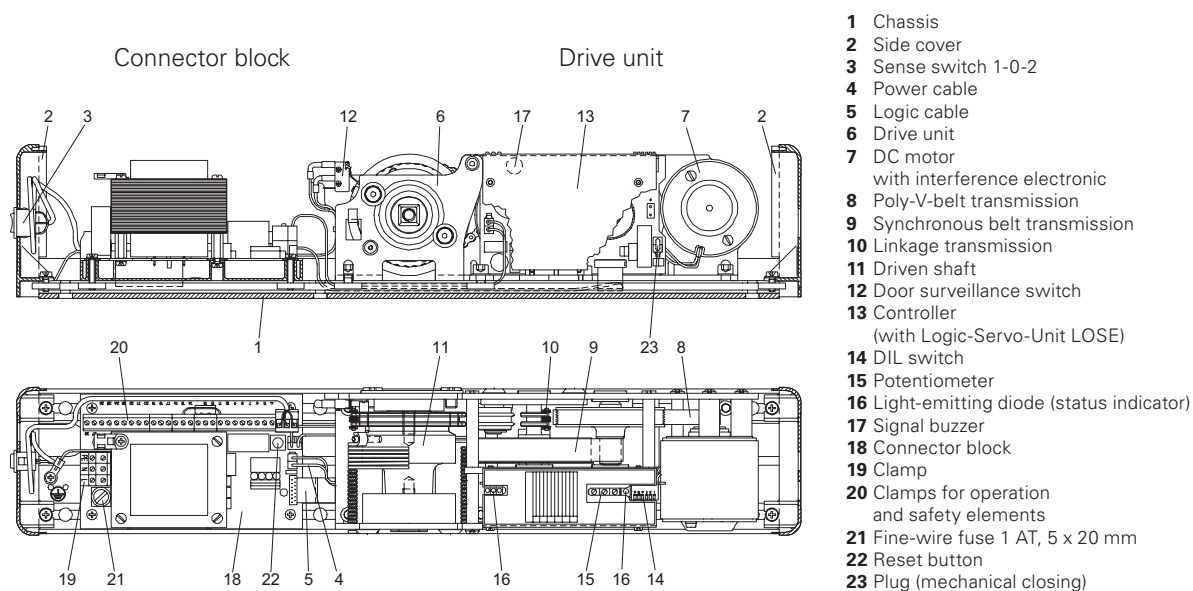
Wherever people work, travel, live, are cared for or congregate, there is a need for doors to facilitate their comings and goings. The automation of doors offers smooth access with unobstructed entry and exit. These drive mechanisms are ideal for use in public buildings, hospitals, hotels, airports, and industrial and commercial premises.

ECO FDC

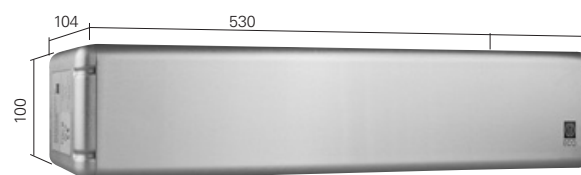
Assembly FDC



Assembly of ECO FDC



Product characteristics		FDC	FDC-B
Closing force (continuously adjustable)	Size acc. to EN	3 – 6	4 – 6
Door width acc. to EN	< 1.400 mm	■	-
	Fire protection doors < 1.400 mm	-	■
Dimensions (incl. mounting plate)	Length in mm	530	530
	Depth in mm	104	104
	Height in mm	100	100
Hinge side with slide rail		■	-
Hinge-opposite side with standard arm		■	■
DIN left / right		□	□
Opening speed adjustable		■	■
Closing speed adjustable when mains operated, fixed when power failure		■	■
Hold-open time adjustable		1 – 30s	
Driving power adjustable		■	■
Door opening angle		70° - 105°	
■ Yes - No □ Option	TÜV-certified	DIN 18650	
	Suitable for fire- and smoke control doors	-	F
	Certified according to EU-Directive	CE	



Dimensions: FDC / -B

Article numbers



Swing-door drive unit without arm	Colour		Article number
FDC	silver	RAL 9006	358500547100000
FDC-B	silver	RAL 9006	358500547101000

Arm / Slide rail	Colour		Article number
Basis arm for FDC and FDC-B (for up to 250 mm lintle depth)	silver	RAL 9006	358500547110020
Slide rail für FDC (for up to 160 mm lintle depth)	silver	RAL 9006	358500547120000



Please order safety elements which offer additional protection at squeezing points and for opposing traffic separately. Infrared **sensor strips acc. to DIN 18650!** Please refer to page 17 for more information.

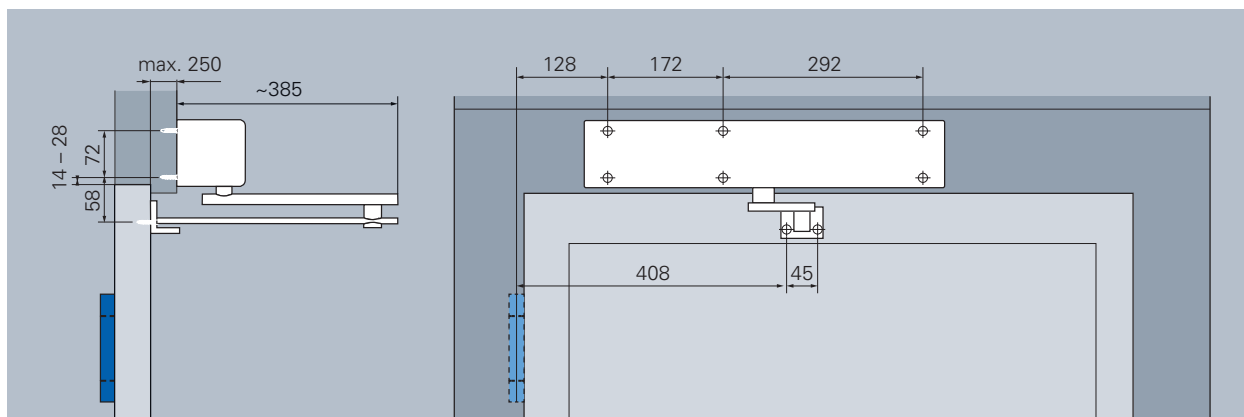


Risk elimination through planning

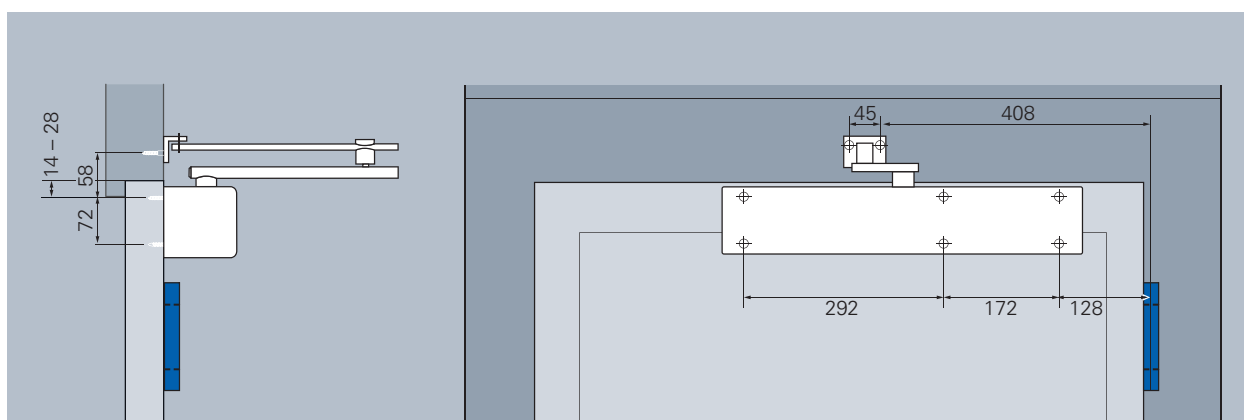
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Mounting drawing FDC

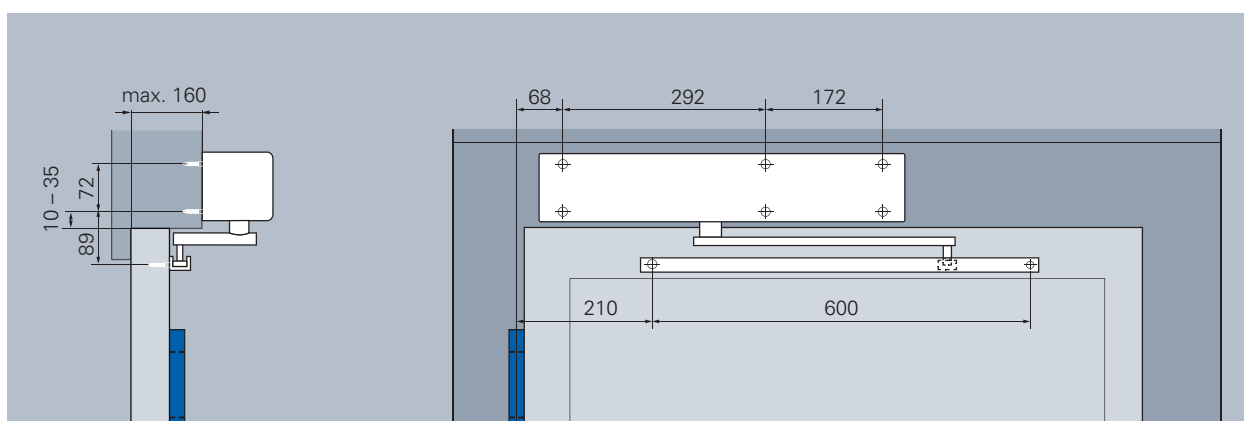
single-leaf door, illustration DIN right-door, DIN left laterally reversed



Installation on door frame with standard arm on hinge-opposite side for single-leaf doors (FDC, pushing)



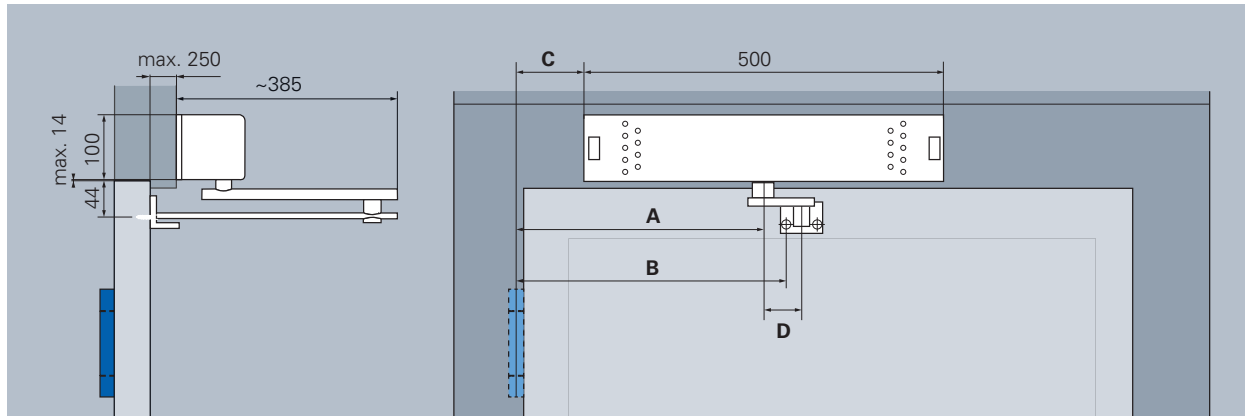
Installation on door leaf with standard arm on hinge-side for single-leaf doors (FDC, pushing)



Installation on door frame with slide rail on hinge-side for single-leaf doors (FDC, pulling)

Mounting drawing FDC-B

single-leaf door, illustration DIN right, DIN left laterally reversed

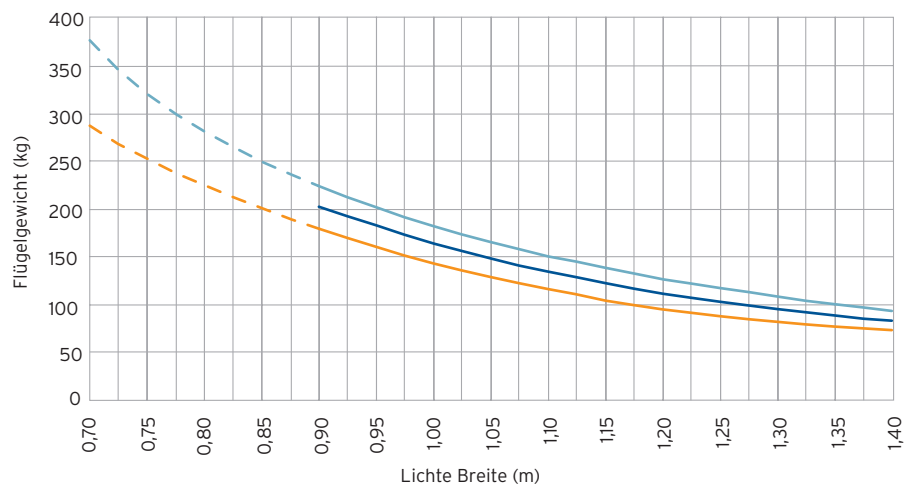


Installation on door frame with standard arm on hinge-opposite side for single-leaf doors (FDC, pushing) F

Please refer to following table in order to check for the corresponding closing force:

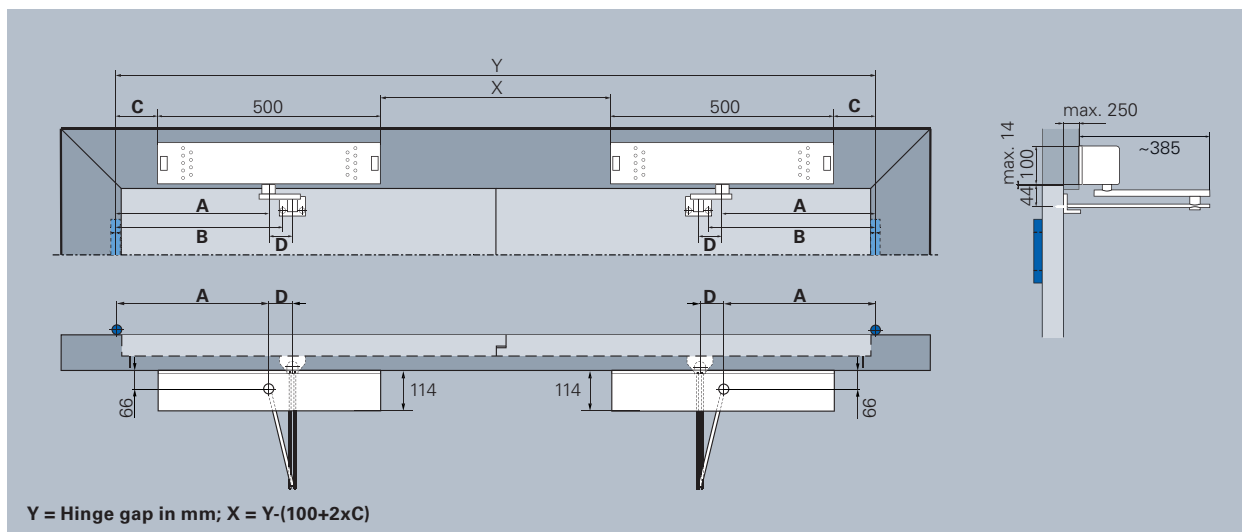
EN	Door width	A	B	C	D
EN 4	950 – 1.100 mm	265	378	15	135
EN 5	1.101 – 1.250 mm	285	348	35	85
EN 6	1.251 – 1.400 mm	374	413	124	61

Range of application FDC



Mounting drawing FDC-B

Double-wing door, illustration DIN right, DIN left laterally reversed

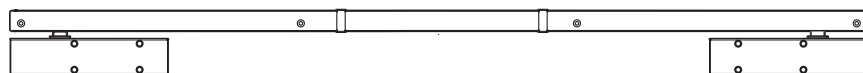


Double-wing execution with master and slave control or with mechanical closing sequence SR (for the use on smoke - and fire-protection doors) **F**

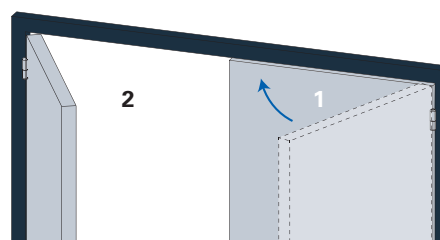
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Mechanical closing sequence system for FDC / -B



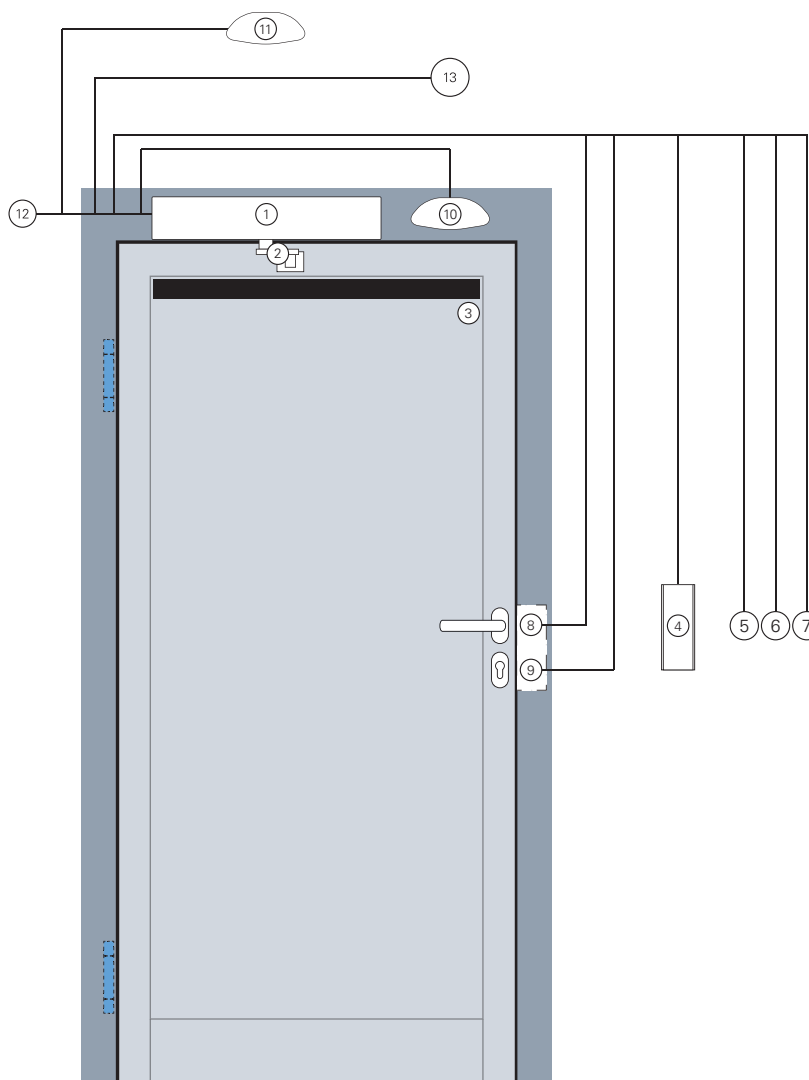
The closing sequence selector ensures that in case of fire or power failure the door leaves are closing in the correct order. That means: passive leaf (1) first, active leaf (2) last.



Closing sequence selector

Closing sequence selector SR	incl. two pivot hinges, automatisation of active and passive leaf
Closing sequence selector SR-TS	incl. pivot hinge and TS-61, automatisation of active leaf
Closing sequence selector SR-EF-1S	incl. pivot hinge and TS-61, automatisation of active leaf, hold-open in passive leaf
Dual locking device 1 / 2	for automatic locking and unlocking of passive leaf
MK Basis-1	Panic flap for full panic doors in fire protection

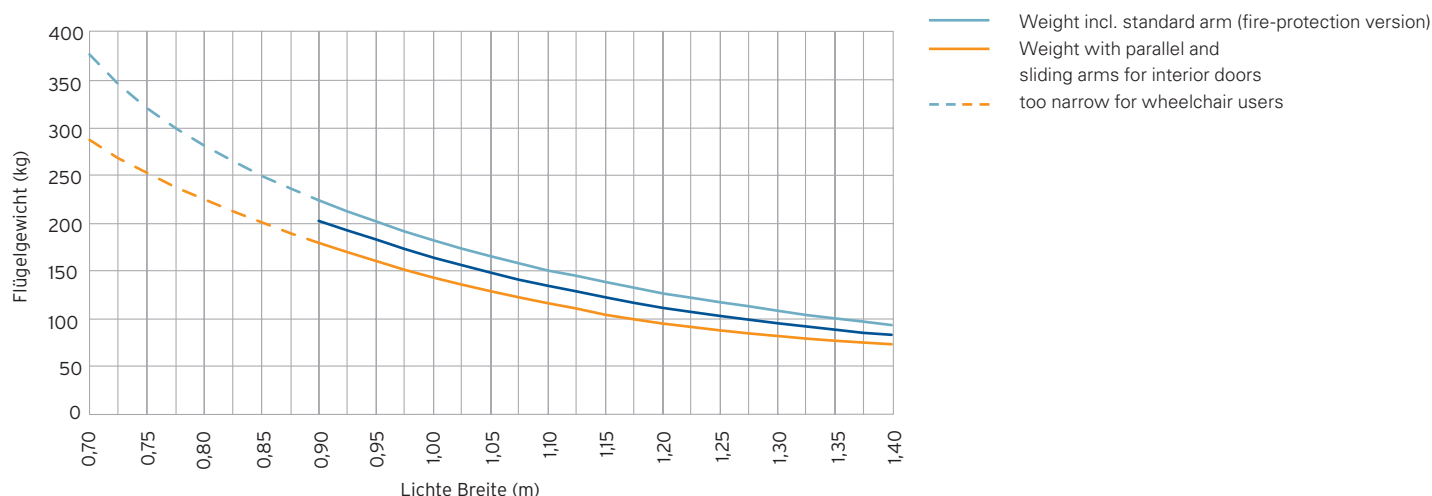
Cable plan FDC-B



Pos.	Product, safety and handling elements	Description cable information
1	ECO FDC-B hinge-opposite side incl. mounting plate, mounting acc. to EN	3 x 1,5 mm ² to Pos.12
2	Standard arm, hinge-opposite side	
3	Sensor strip, hinge-opposite side, revers	Cable by ECO, cable channel by building contractor
3.1	Sensor strip, BS, Stop	Cable by ECO, cable channel by building contractor
4	Flip switch inside, with surface-mounted socket	4 x 0,8 mm ²
4.1	Flip switch outside, with surface-mounted socket	4 x 0,8 mm ²
5	Key sense switch	4 x 0,8 mm ²
6	Push button "Door close"	4 x 0,8 mm ²
7	Bedis - sense switch with LED display	4 x 0,6 mm ²
8	Electric opener	4 x 0,8 mm ²
9	Dead bolt switch contact	4 x 0,8 mm ²
10	Switch ORS 142 W	4 x 0,8 mm ²
11	Celling switch ORS 142, inside	4 x 0,8 mm ²
11.1	Celling switch ORS 142, outside	4 x 0,8 mm ²
12	Home office socket	3 x 1,5 mm ² 230 V, 50 Hz, 13A
13	Radar OKI (inside)	
13.1	Radar OKA (outside)	

Technical specifications

Application range FDC



Technical specifications: FDC

Main supply	230 V, 50 Hz, 13 A
Motor power consumption	<100 W
Ambient temperature	-15 to +70 °C
Use in dry rooms	max. relative air humidity 65%
Door opening angle	70 – 105°
Opening speed	adjustable
Closing speed	adjustable with mains operation, fixed if there is a power failure
Hold-open time	1 - 30 sec (adjustable)
Driving power	adjustable
TÜV-certified	acc. to DIN 18650
Dimensions	530 x 100 x 104 mm
Weight incl. standard arm	11,3 kg

Basic planning data

	FDC	FDC-B for fire-rated doors
Door panel width	max. 700 - 1.400 mm	max. 900 - 1.400 mm
Activ range	Doors EN 3 - 6	Doors EN 4 - 6
Opening and closing	Motor-actuated opening, closure by spring force. The spring provides improved closing power to reinforce the shutting action.	
Function «Closing»	The door closes under full control by spring action from any position (self closure if power fails).	If a fire alarm or power cut is activated, the door closes under full control from any position by means of spring action.

A range of individual extra functions is also available:

- Reinforced closure
- Push and go function
- Adjustable opening width
- Safety monitoring with automatic stop/reverse mechanism
- Progressive regulation of opening and closing speed, hold-open time and motor power
- Optical/acoustic signal during movement of door mechanism
- Automatic closing sequence control for two-winged (bi-parting) systems
- Dry contact for further processing of information at a central building control point, or the connection of an electric lock, door open/shut signal, error display

Accessories FDC / -B



Mounting plate

Necessary for fire-rated doors as well as mounting on brickwork

Mounting plate	Article number
MPL	358500547394000



Door stop

Mechanical stop where no floor stop can be set.

Range of use: FDC/-B in connection with standard or slide arms. Not possible with short shims and low-level installation.

When connected with the FC-B, the mounting plate must also be installed.

Must be installed +50 mm with axis extension!

Door stop	Article number
OA	358500547124000



Brake for holding magnet

For a 90° setting for the function "permanent open" (retrofit kit)

Brake for holding magnet	Article number
HMB	358500547467000



Axis extension

To be used for special mountings

Axis extension		Article number
Axis extension 20 slide arm	20 mm	358500547111000
Axis extension 50 slide arm	50 mm	358500547112000
Axis extension 20 standard arm	20 mm	358500547111000
Axis extension 50 standard arm	50 mm	358500547112000

BEDIS control device complete

For setting all control functions as well as programming via switch function with LED status display.

Sense switch	Article number
Bedis	35850723150000



Key sense switch (in-wall mounted)

For setting the functions "permanent open" "automatic" or "manual open" for authorized persons.

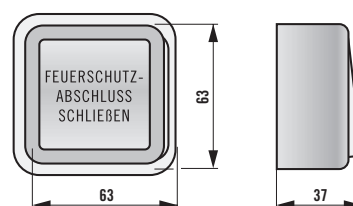
Sense switch	Article number
SPS	358506442602000



Interrupt button HAT 02 AP / UP

Surface mounted / in-wall mounted
Contact: Opener switching voltage: Max. 30 VDC
Switching current: Max. 1 A, Degree of protection IP 20

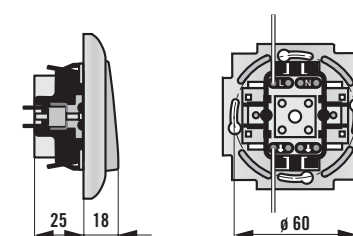
Interrupt button	Article number
HAT 02 AP/UP	356500143



Flip switch

Function Door "OPEN".
System of protection IP 40
80 x 80 mm

Interrupt button	Article number
HAT AUF AP/UP	358506443211000



Accessories FDC / -B



Flip switch

Function Door "OPEN". Supply voltage 250 VAC / 30 VDC Current consumption max. 10 AAC / 2 ADC System of protection IP 40 225 x 83 mm

Flip switch		Article number
GFT	platinum grey (RAL 7036)	358506443210000



Elbow switch

For the use with arm or elbow.
For the use in sanitary areas.

Elbow switch	Article number
EBT	358500734282000



Radar 1000 Domino

Radar motion detector which acts as surge generator for automatic doors.

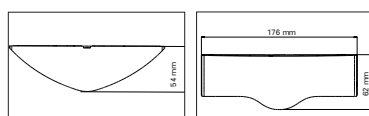
Radar 1000 Domino	Article number
Domino 1000	358506466127000



Radar Merkur SE/F

Radar motion detector which acts as surge generator for automatic doors, direction - sensitive.

Radar Merkur SE/F	Article number
Merkur SE/F	358506466126000



Sensor strip

Active infrared sensor for automatic doors. Secures the pedestrian traffice area. Stops and reverses when detecting obstacles.

Sensor strip	Article number
with 2 sensors, length up to 1.100 mm (can be shortened)	358506452243000
with 3 sensors, length up to 1.500 mm (can be shortened)	358506466402000



DIN 18650

Finger protection shade

Protection of squeezing points between door leaf and door frame at the hinge-opposite side. Belated mounting possible.

Finger protection shade	Height	Article number
FSR	1.920 mm	3504710132



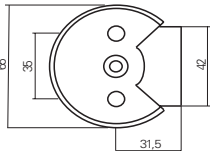
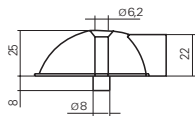
Door stop / Wall stop

Stainless steel, satin
Including fixing material.

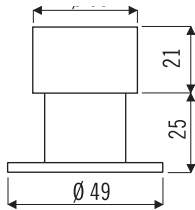
Door stop	Article number
BS 65	257009.46
WS 46	257008.46



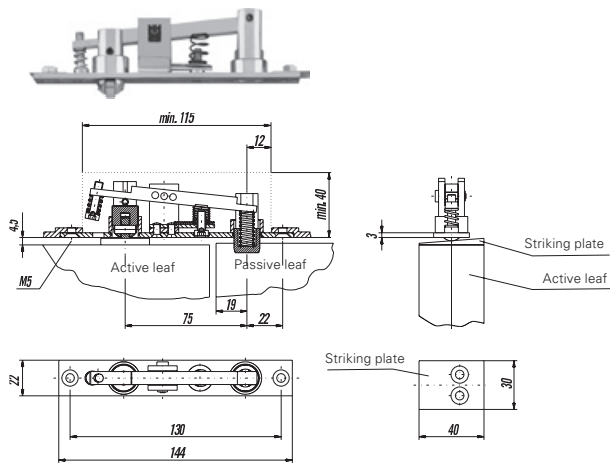
Door stop BS 65



Wall stop WS 46



Accessories FDC / -B



Dual locking device system 1

The passive door leaf is locked when the active door leaf is closed since the indexing bolt is pushed up, causing the locking bolt to engage in the passive door leaf. The passive door leaf is likewise unlocked when the active door leaf is opened since the locking bolt is retracted by spring pressure. The pressure of the door closer ensures that the passive door leaf remains in closed position.

Delivery includes striking plate.

Dual locking device system	Article number
Dual locking device system 1	204585500000000

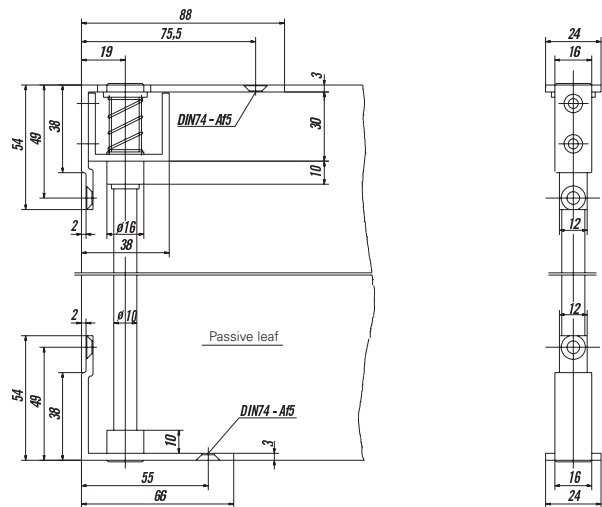


Dual locking device system 2

In addition to system I the top fastening, the passive door leaf can also be locked at the bottom. A continuous locking bar is built into the passive door leaf in a resilient mounting. The locking bolt presses against the locking bar which engages in the ground, securing the passive door leaf. When the active door leaf is opened, the locking bolt is pulled back and the locking bar is in its initial position.

Scope of delivery included locking bar (2.500 mm).

Dual locking device system	Article number
Dual locking device system 2	204586500000000



Airport Düsseldorf,
Germany



ECO Schulte Worldwide trust.

For years, ECO products have been used everywhere in the world where quality, reliability and safety are important. ECO systems obtained acceptance by the connection of functionality and design.

We would like to take this opportunity to say how much we appreciate the trust ECO products enjoy throughout the world. We regard this as a challenge to meet the future requirements of our customers and of the market through continuous further development and demand-oriented production.

ECO FDC ■ Risk evaluation for automatic ECO swing door

Offer no.: _____

Order no.: _____

Bases

According to standard **DIN 18650** 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.

Information regarding the risk

To ensure an appropriate planning of the required protection measures, we need detailed specifications regarding the architectural environment of the door installation as well as on the probable user groups.

Information regarding the object

Object type: _____

Installation site: _____

Definition of the user groups

The following evaluation ...

☐ was made by the customer

☐ is made on an assumption of the sales consultant.


Privat domain	Public domain
Will be regularly used by: <input type="checkbox"/> defined authorized persons <input type="checkbox"/> only instructed persons	Will be regularly used by: <input type="checkbox"/> generally public access, even for user groups requiring particular protections

Evaluation of the necessary protective measures

For the evaluation of the necessary protective measures, please refer to the following sheet no. 2.

Issuing a quotation or order confirmation

The quotation / order confirmation will be based on the evaluation of the required protective measures.

Applies for the following ECO swing door drive units:		 ECO ECO Schulte GmbH & Co. KG D-58706 Menden
<input type="checkbox"/> FDC <input type="checkbox"/> FDC-B	<input type="checkbox"/> single leaf <input type="checkbox"/> double leaf	

Result of the risk evaluation

The planned protective measures are...

<input type="checkbox"/> Sufficient for the privat domain.	<input type="checkbox"/> Admissible for the public domain.
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Note:

Any structural changes or a modification of the user groups must be immediately communicated by the customers, as these may involve an adaption of the required protective measures.

Supplier:

Customer:

Sales consultant: _____

To be signed by the customer upon contract award.

Signature: _____

Address: _____

Date: _____

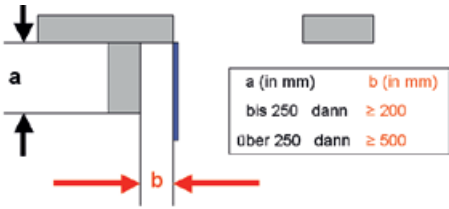
Name: _____


Signature: _____

Date: _____

Offer no.: _____

Order no.: _____

Motorized opening motion		
Shoving	<input type="checkbox"/> Limitation of the dynamic door wing force or <input type="checkbox"/> No protective measures	<input type="checkbox"/> Contact-less protective device by means for presence detectors
Crushing	<input type="checkbox"/> Limitation of the dynamic door wing forces	<input type="checkbox"/> Contact-less protective device by means for presence detectors or <input type="checkbox"/> Sufficient safety distance**
<p>** Sufficient safety distance</p> 		

Motorized closing motion		
Shoving	<input type="checkbox"/> Limitation of the dynamic door wing force <input type="checkbox"/> No protective measures	<input type="checkbox"/> Contact-less protective device by means for presence detectors
Squeezing / crushing Primary closing edge	<input type="checkbox"/> Limitation of the dynamic door wing force or <input type="checkbox"/> No protective measures	<input type="checkbox"/> Contact-less protective device by means for presence detectors or <input type="checkbox"/> Use of a closing sequence selector (double leaf)
Squeezing / crushing Secondary closing edge	<input type="checkbox"/> No protective measures	<input type="checkbox"/> Separating protective device *** <input type="checkbox"/> Prevention by constructive measures ***
<p>*** Examples of separating protective device and prevention by constructive measures</p> 		
Pull-in	<input type="checkbox"/> Limitation of the dynamic door wing force	<input type="checkbox"/> Contact-less protective device by means for presence detectors or <input type="checkbox"/> Sufficient safety distance (< 8 mm or > 25 mm)

Automatic swing-door drive unit type ECO FDC

Connected Load: 220/230 V Hz, 100 W, Dimensions 530/100/104mm.

Electro mechanical swing-door drive unit with direct current motor and return spring.

Motor transmission unit, control system, power supply.

Safety monitor with stop and reversal automatic.

Intergrated program switch for automatic, permanently open and manual mode is integrated in side cap. Opening and closing speed continuously adjustable.

Opening angle 70-105°. Drive covering made of stainless steel. Incl. CE- identification.

Variants:

- FDC (for doors without requirements)
- FDC-B (for fire- and smoke controlled doors)
- variant double leaf doors

Types of assemblies:

- standard assembly, oppressive, head assembling on hinge opposite side
- slide rail assembly, pulling, head assembling on hinge side (not for FDC-B)

Impulse generator:

- control panel manually, with 5 switching positions for automatic, one way, locked, permanently open, manual mode incl. reset push-button
- control panel BDE with 5 switching positions and LEDs for automatic, one way, locked, permanently open, manual mode, reset.
- key sensor switch manually, with switching positions for automatic, one way, locked, permanently open, manual mode. Applicable for external doors.
- push button 80x80mm „door open“
- extra wide push button 225x80 „door open“
- radar motion sensor type Domino- black
- radar motion sensor type Mercury (escape and access routes)

Safety installations:

- infrared sensor bar 1.100mm, with overlying cable transition
- infrared sensor bar 1.500mm, with overlying cable transition
- height of finger guard blind till 2,1m , protection of shearing and crushing points

Accessories:

- magnetic brake, for adjustment of drive while continuously open
- open end stop, with internal stop, if no door stopper can be placed
- lengthening spindle for assemblies with special mountings
- electric door opener for doors without requirements, 100% ED
- electric door opener for fire- and smoke controlled doors, 100% EF
- dead bolt control (turns the FDC off, if lock is blocked)
- mortice plate acc. door profile and admission

Scope of services:

- delivery incl. freight and packaging
- mounting
- mounting incl. bringing into service/ final inspection
- maintenance agreement with 1 maintenance/ year
- additional mounting effort for connection work (components provided by the customer)

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■ SYSTEM TECHNOLOGY FOR THE DOOR

