



Automatic Curved
Sliding Doors

DORMA

BST/FBST  **SPECIAL LINE**

Attractive appearance, extensive design options

DORMA BST SPECIAL LINE automatic curved sliding doors are the perfect answer to providing entrance areas with a customised and aesthetically pleasing appearance. Half-circles, full circles, ovals, segments, double segments, convex, concave, made-to-measure and versions deriving from these variants: anything is possible.

The door systems are manufactured as concave and convex versions. Tailored to your architectural concept, DORMA BST SPECIAL LINE automatic curved sliding doors can be designed to either contrast or harmonise with the building façade,

providing an all-glass appearance complemented and augmented by the slender profiles of their fine-framing.

DORMA BST SPECIAL LINE automatic curved sliding doors will perform draught exclusion and airlock functions, steer people in the right direction and give width and depth to even cramped structural openings.

They can also be combined with other automatic doors.

Reliable and safe

As in the case of all components and systems from the DORMA portfolio, DORMA BST SPECIAL LINE curved sliding doors excel in reliability and user convenience. The self-learning microprocessor control unit keeps the system running smoothly and reliably. Combining with the integrated presence sensor, it also ensures maximum operational safety.

The doors are designed to order, manufactured to fit and supplied ready for installation. If required, DORMA will also perform the installation and commissioning work.

For emergency exits and escape routes

Under the designation DORMA FBST SPECIAL LINE, these curved sliding doors can also be supplied with a redundant operator, an additional control unit for safety purposes and a special radar motion detector. The FBST is typed-approved by the German TÜV as an "automatic sliding door without breakout for use in escape routes".

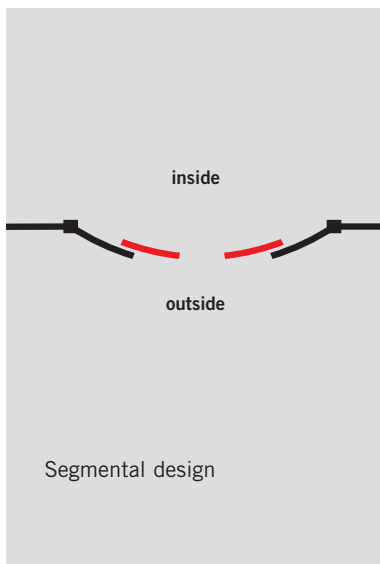
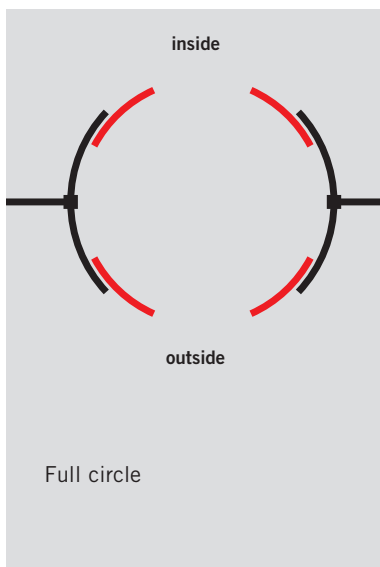
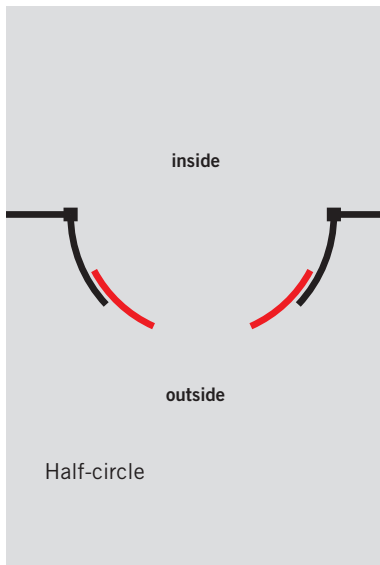
If desired, the doors can be equipped with safety components (sensors) in accordance with DIN 18650.



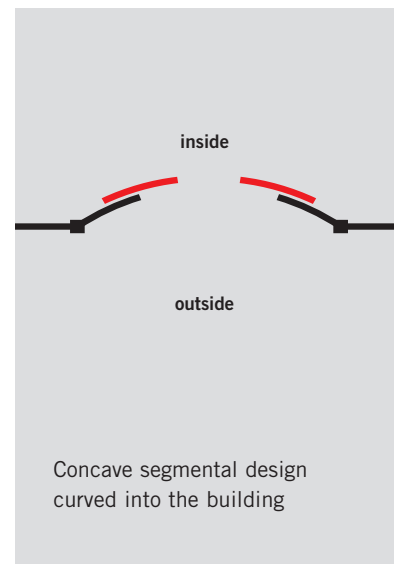
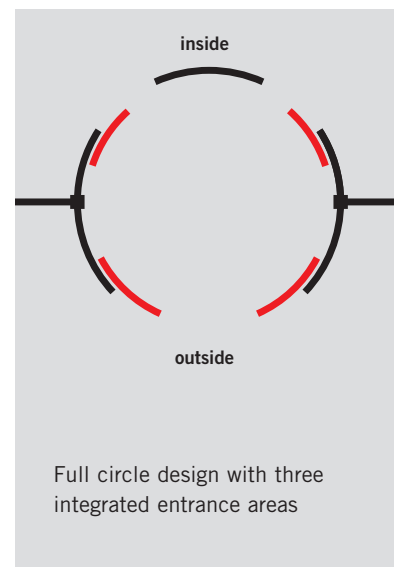
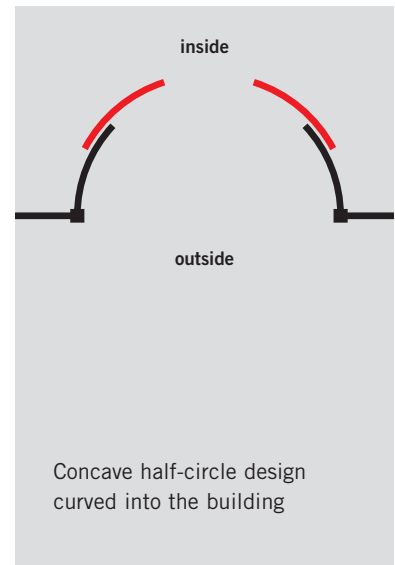
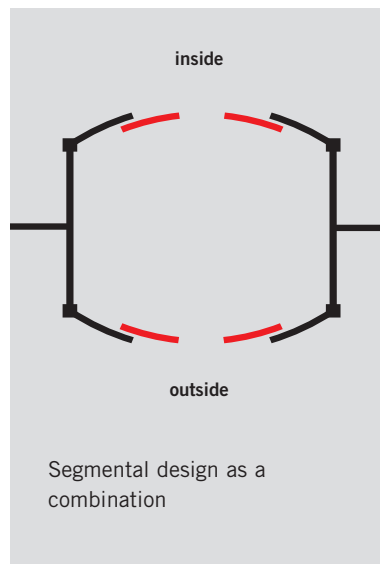
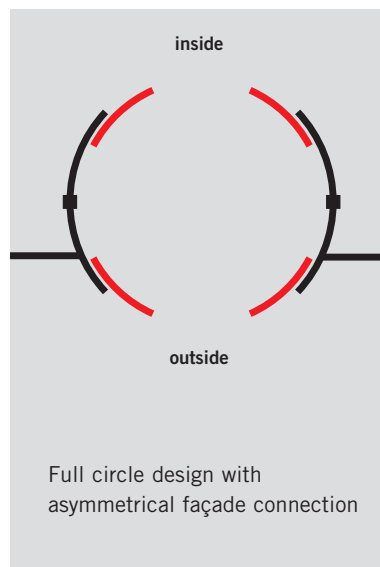
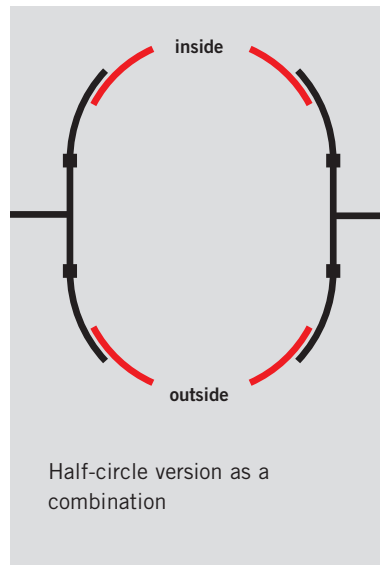
**DORMA FBST with approval
for application in emergency
exits and escape routes
according to DIN 18650**



Basic configurations



Layout options



Data and features	DORMA BST	DORMA FBST
Clear passage width LW ²⁾	1000 – 2500 mm ¹⁾³⁾	
Escape route width F	–	1000 – 2500 mm ¹⁾³⁾
Installation width B, min. ²⁾	2064 mm	
Passage height H	2100 – 2500 mm ¹⁾	
Half-circle radius r	1000 – 2000 mm ¹⁾	
Full circle radius r	1000 – 2000 mm ¹⁾	
Segmental radius r	freely selectable, min. 1000 mm	
Number of sliding panels	1 ³⁾ or 2	
2-panel, symmetrical	●	
1-panel	○	
Asymmetrical	○	
Fixed side screens	●	
Canopy height (min.)	240 mm	
Canopy height extension (240 – 1000 mm) ¹⁾	○	
Sliding panel, convex	●	
Sliding panel, concave	○	
Max. weight per door panel	130 kg	110 kg

¹⁾ Standard dimensions (other dimensions on request)

²⁾ Depending on radius r

³⁾ max. clear passage width (LW) for 1-panel door = 1300 mm

Technical data	DORMA BST	DORMA FBST
Power consumption, max.	250 W	
Power consumption, average	30 W	
Supply voltage/frequency	230 V 50 – 60 Hz	
External power supply	27 V DC 2 A	
TÜV type-approved	●	
Compliant with the Low Voltage Directive	●	
Manufactured to ISO 9001	●	

Adjustable parameters	DORMA BST	DORMA FBST
Opening speed per panel, adjustable	100 – 600 mm/sec.	
Closing speed per panel, adjustable	100 – 500 mm/sec.	
Low (creep) speed per panel, adjustable	30 – 90 mm/sec.	
Opening and closing force, adjustable	●	
Max. force on contact with obstacle	150 N	

Operator and control unit	BST	FBST
Operator	ES 200	ES 200 2D
Microprocessor control unit	●	
Integrated presence sensor	○	
Equipped in accordance with DIN 18650	○	
Obstruction self-recognition	●	
Automatic reversing cycle on obstruction contact	●	
Complete system self-test	●	
Connection for airlock function	●	–
Parameter adjustment capable	●	
Self-learning	●	
Class of protection	IP 20	
Pulse expansion for cheque and code card readers or key switches	●	
Potential-free contact	●	
Bus-capable	●	
Door status contact, locking device for door system	○	
Module for connection to EIB building management systems	○	
RSM module for connection to telephone network	○	

Program modes	BST	FBST
Off	●	
Automatic	●	
Exit Only	●	
Permanent Open	●	
Partial Open, Exit Only	●	
Night-/Bank Function	●	

Design of ceiling	180°/360°	Segment
Ceiling	●	○
Operator cover	○	●
Upper dust-proof ceiling	●	●
Rain-proof ceiling with drainage spouts (prepared)	○	–

● standard
○ optional

Profiles and glazing	BST	FBST
Fine-frame profile system with 10 mm toughened safety glass - G	●	
Fine-frame profile system with 10 mm laminated safety glass - G	○	
Double glazing profile system with 18 mm double-glazing - Iso	○	
Special glazing with patterning, sand-blast effect, screen printing etc.	○	

Accessories	BST	FBST
Curved fanlight	○	
Straight panel board for top façade connection	○	
Lateral façade connection glass/panel board	○	
Aluminium girder with aluminium cover, external	●	
Aluminium girder	●	
Adhesive-bonded midrails	○	
Air curtain (180 and 360° design, canopy extension required)	○	
Downlights		
Ceiling aperture for downlights by others	○	
Halogen spot, 20 W, including ceiling aperture and accessories	○	
Floor finish		
Emco floor mat	○	
Arwei floor mat	○	
Floor guide rail		
Surface-mounted floor guide without floor ring	●	
Surface-mounted floor guide with floor ring	○	
Flush-mounted floor guide with floor ring (Compulsory for clear passage widths (LW) beyond 1500 mm)		○

Accessories/Safety equipment	BST	FBST
Locking device		
Electro-mechanical locking device	○	–
Electro-mechanical locking device with manual lock release	○	○
Fail-safe via emergency power supply unit	○	●
Monitored rechargeable battery pack	○	●
Intrinsically safe activator in escape direction	–	●
Radar motion detector, external	○	
Radar motion detector, internal	○	
Emergency pushbuttons		
Emergency Off function	○	–
Emergency Opening function	–	○

Half-circle and full-circle configurations

Standard dimensions

Clear passage width	LW
Actual radius	r
Internal width	S
System width	B
Clear passage height	LH
Canopy height	SH
System height	H
Dimensions in mm	

Half-circle and full-circle configurations

Fine-frame profile system G

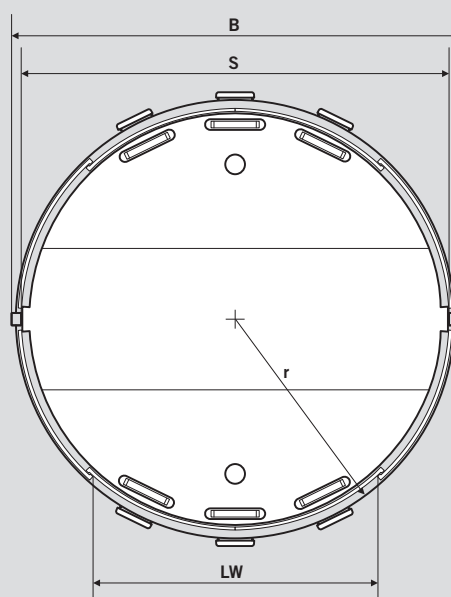
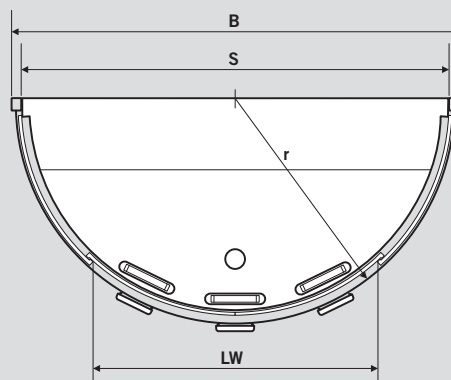
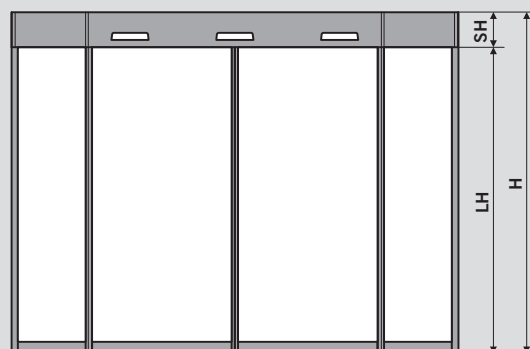
r	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
B	2064	2264	2464	2664	2864	3064	3264	3464	3664	3864	4064
S	1932	2132	2332	2532	2732	2932	3132	3332	3532	3732	3932
LW	1221	1363	1504	1646	1788	1929	2071	2212	2354	2495	2500

Double-glazing profile system Iso

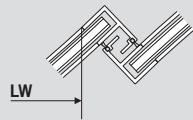
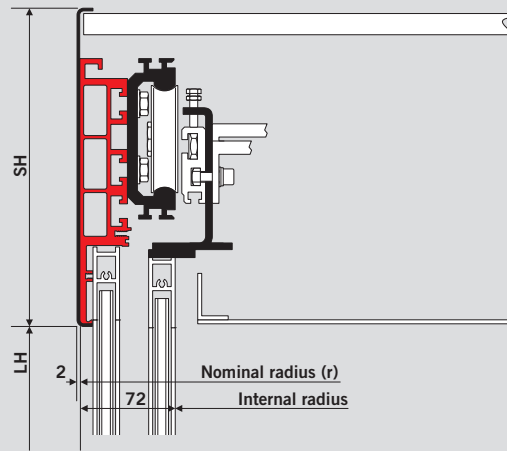
r	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
B	2044	2244	2444	2644	2844	3044	3244	3444	3644	3844	4044
S	1912	2112	2312	2512	2712	2912	3112	3312	3512	3712	3912
LW	1184	1326	1468	1609	1751	1893	2034	2176	2317	2459	2500



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Fine-frame profile system G

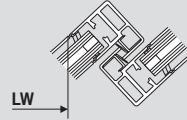
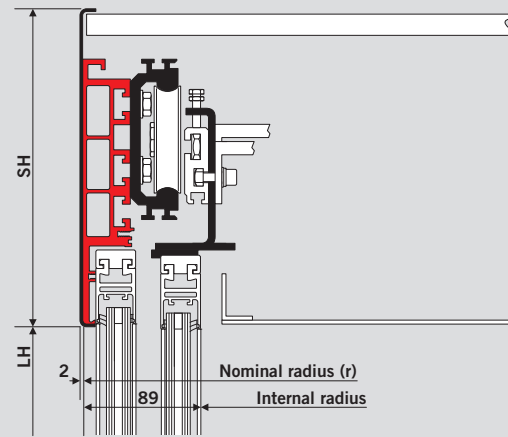


Drum wall and sliding panel with sealing profiles



Panels with centre seals

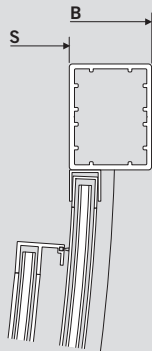
Double-glazing profile system Iso



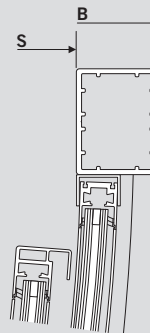
Drum wall and sliding panel with sealing profiles



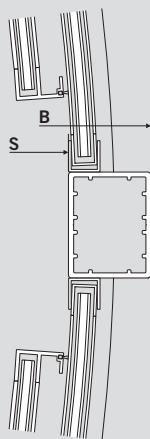
Panels with centre seals



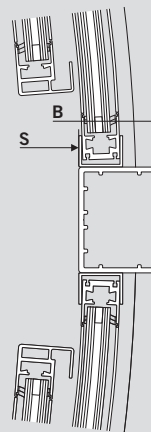
Aluminium girder with connection to half-circle drum wall



Aluminium girder with connection to half-circle drum wall



Aluminium girder with connection to full circle drum wall

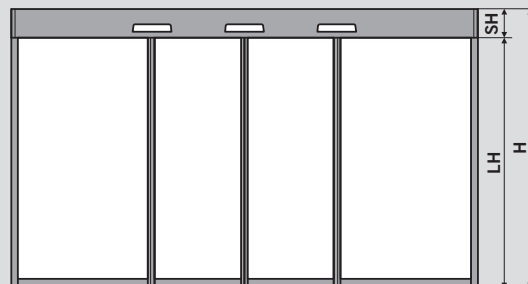


Aluminium girder with connection to full circle drum wall

Segmental designs

Standard dimensions

Clear passage width	LW
Actual radius	r
Internal width	S
System width	B
Arc length	BL
Clear passage height	LH
Canopy height	SH
System height	H
Dimensions in mm	



Standard dimensions:

Arc length BL: max. 6600 mm

Clear passage width LW: 1000 mm – 2500 mm

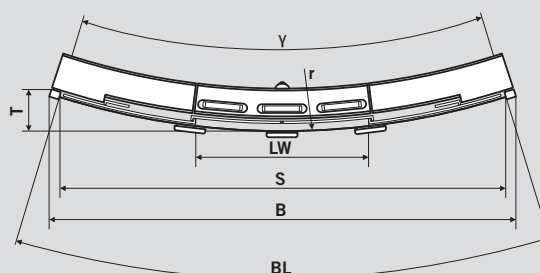
Calculating arc length BL

– For a given radius r and angle γ

$$BL = r \cdot \frac{\gamma \cdot \pi}{180}$$

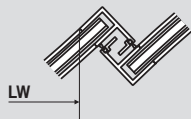
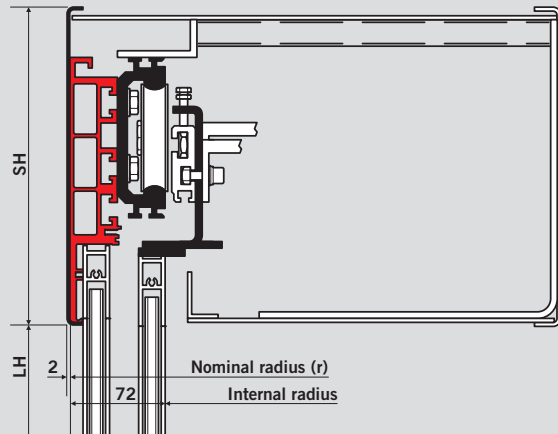
– For a given system depth T and system width B

$$BL = \sqrt{B^2 + \frac{16}{3} \cdot T^2}$$



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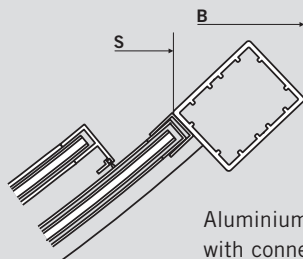
Fine-frame profile system G



Drum wall and sliding panel with sealing profiles

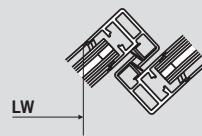
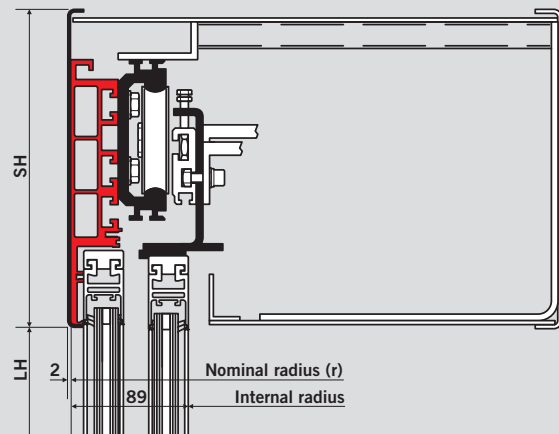


Panels with centre seals



Aluminium girder with connection to drum wall

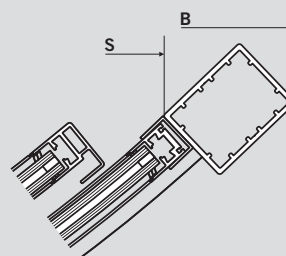
Double-glazing profile system Iso



Drum wall and sliding panel with sealing profiles



Panels with centre seals



Aluminium girder with connection to drum wall

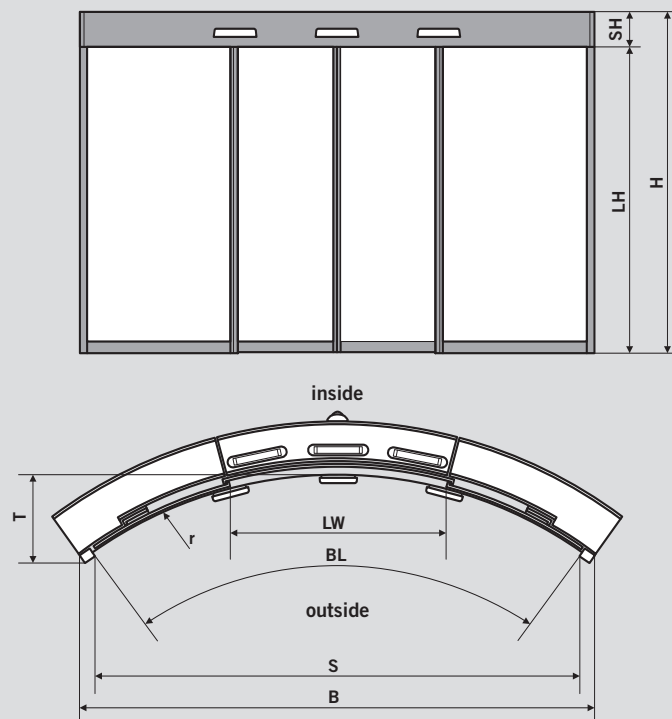
Examples for special configurations

Concave segment

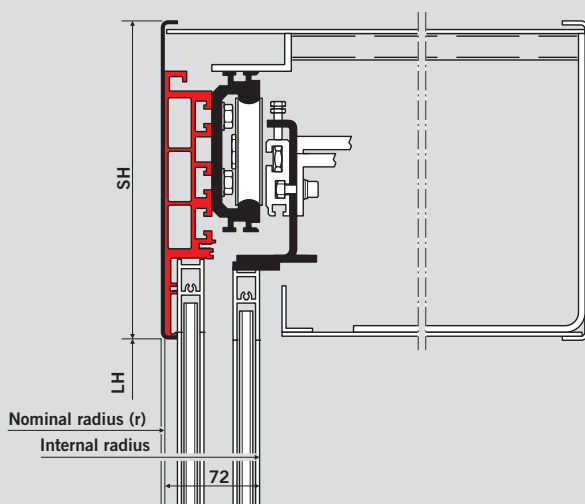
Standard dimensions:

Arc length **BL**:
max. 6600 mm

Clear passage width **LW**:
1000 – 2500 mm

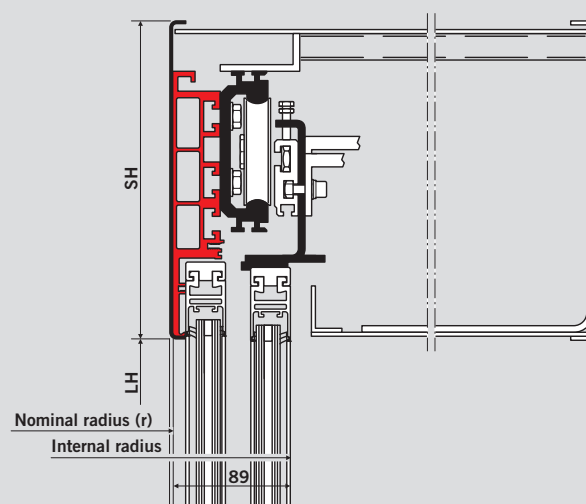


Fine-frame profile system G



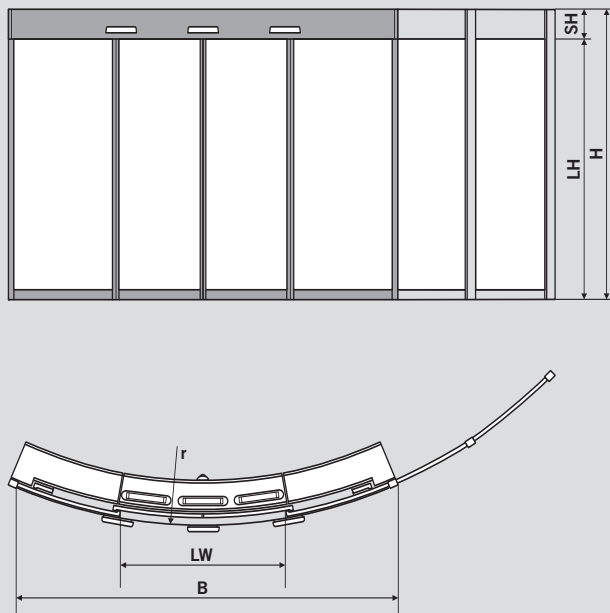
Aluminium girder with
connection to drum wall

Double-glazing profile system Iso

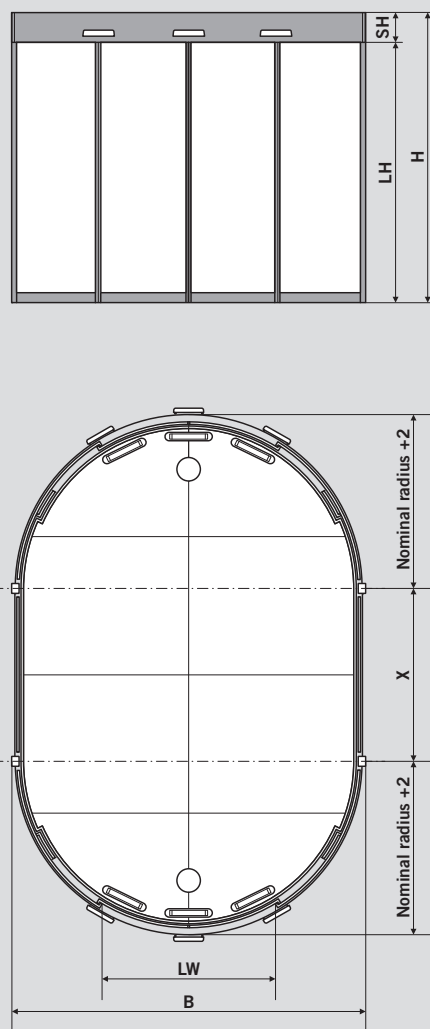


Aluminium girder with
connection to drum wall

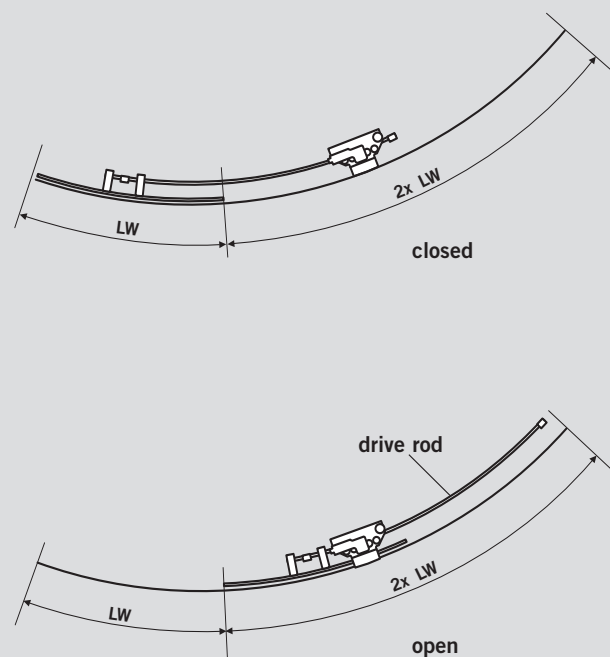
Asymmetrical door system



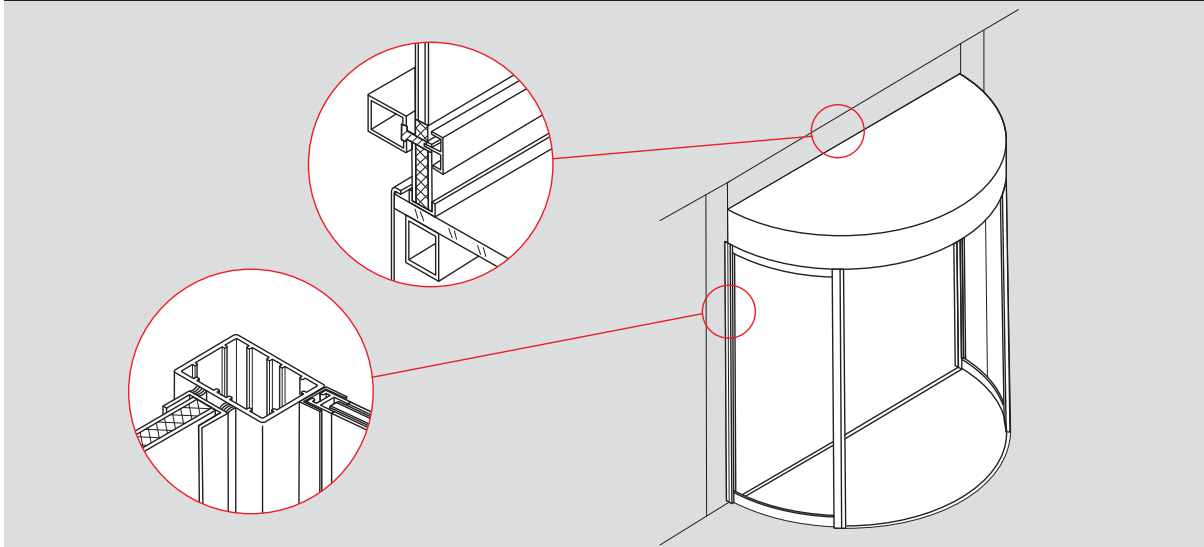
Half-circle as a combination



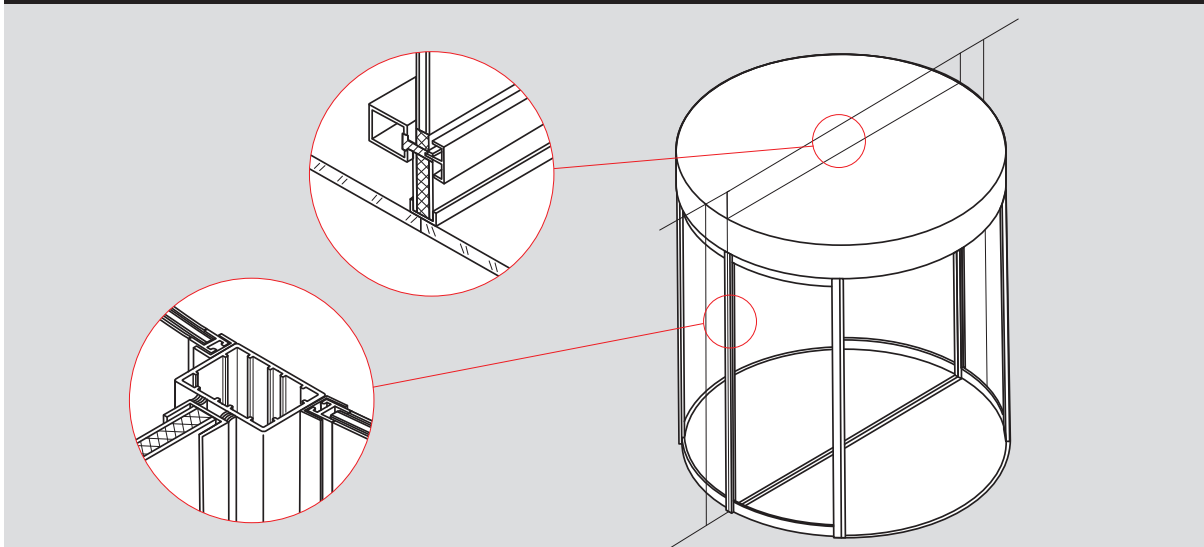
1-panel system



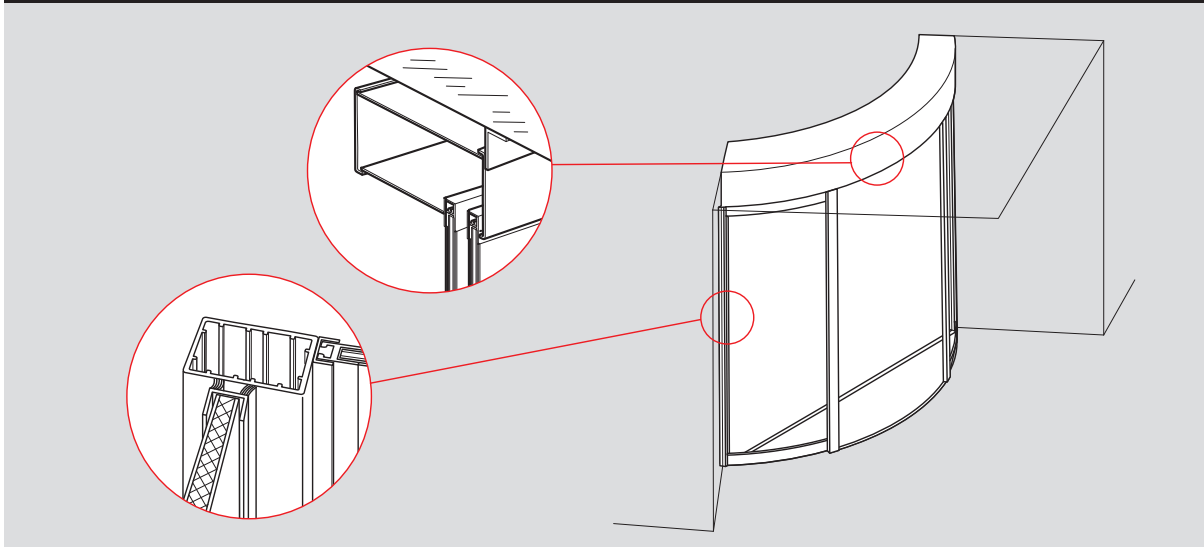
Façade connection 180°



Façade connection 360°

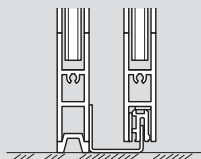


Façade connection with segmental design

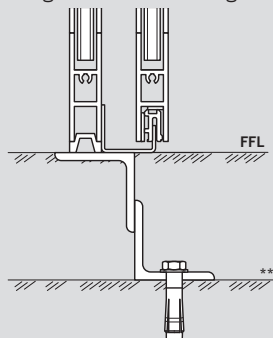


Floor guides

Surface-mounted floor guide without floor ring



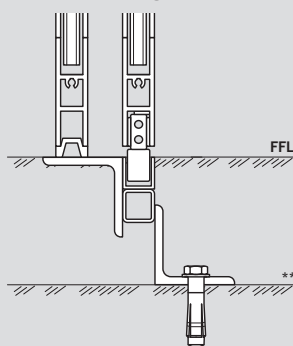
Surface-mounted floor guide with floor ring



The design of the floor guide depends on the opening width* and the prevailing on-site conditions and comprises

- surface-mounted floor guides with/without floor ring
- flush-mounted floor guides with floor ring.

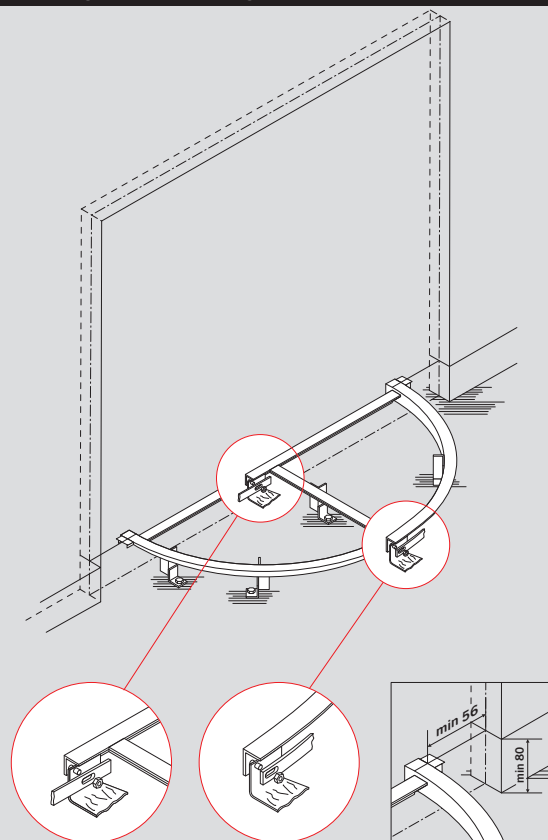
Flush-mounted floor guide with floor ring



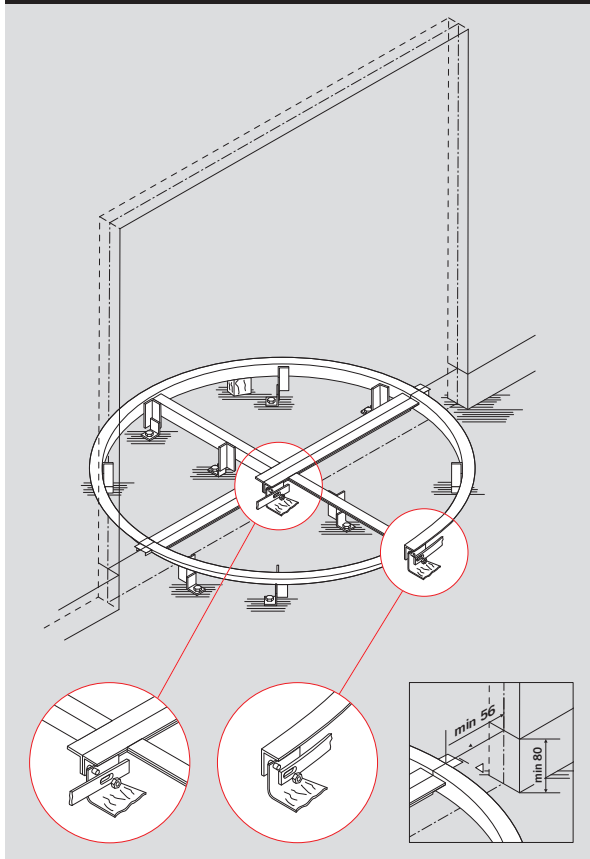
*Starting from a clear opening width of 1500 mm, a flush-mounted floor guide is required.

**upper edge of unfinished floor

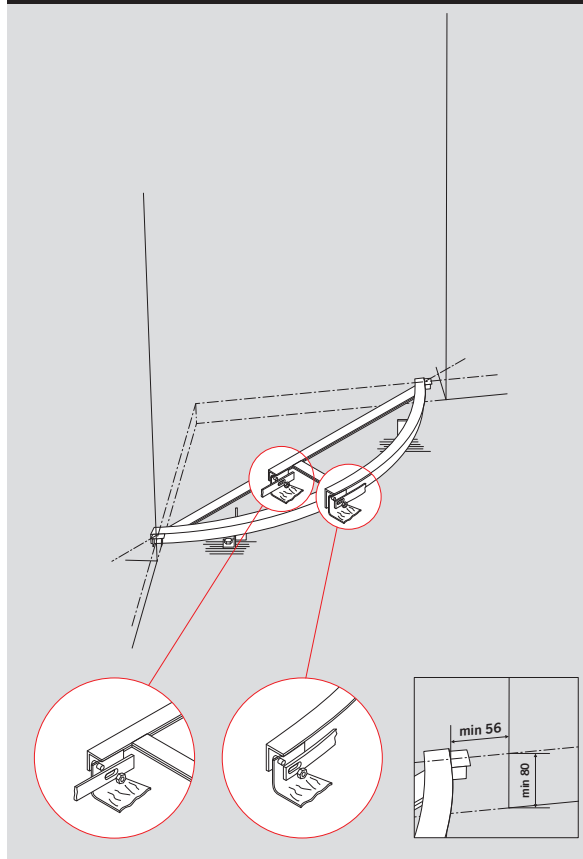
Floor ring half-circle design

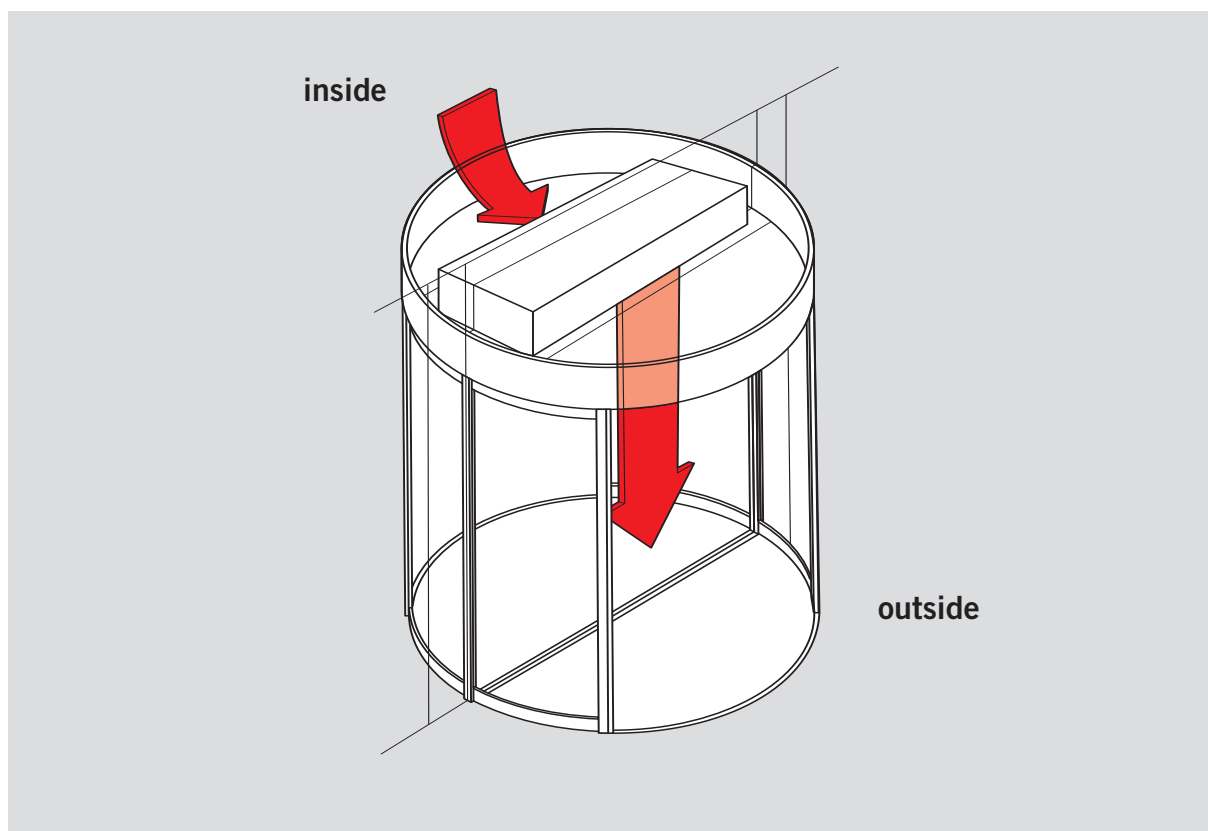


Floor ring with full circle design

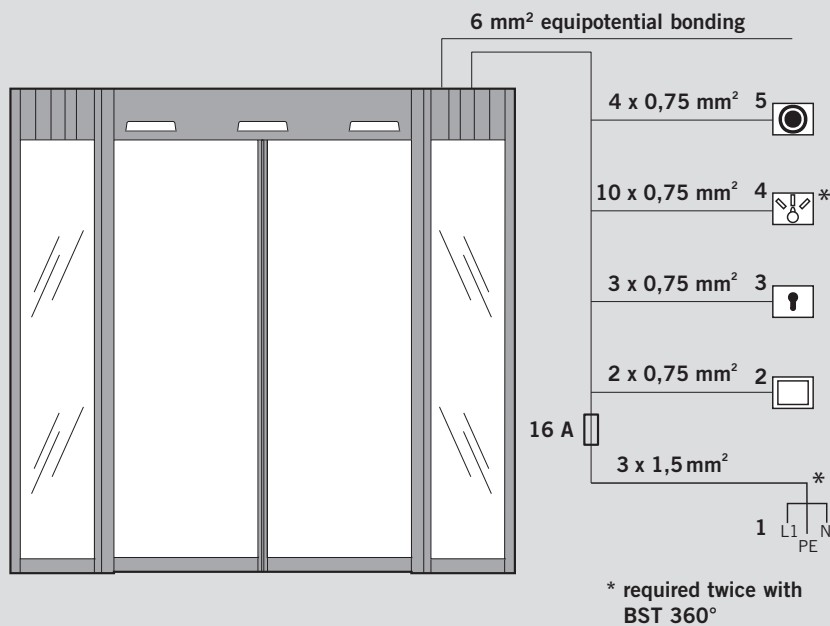


Floor ring segmental design





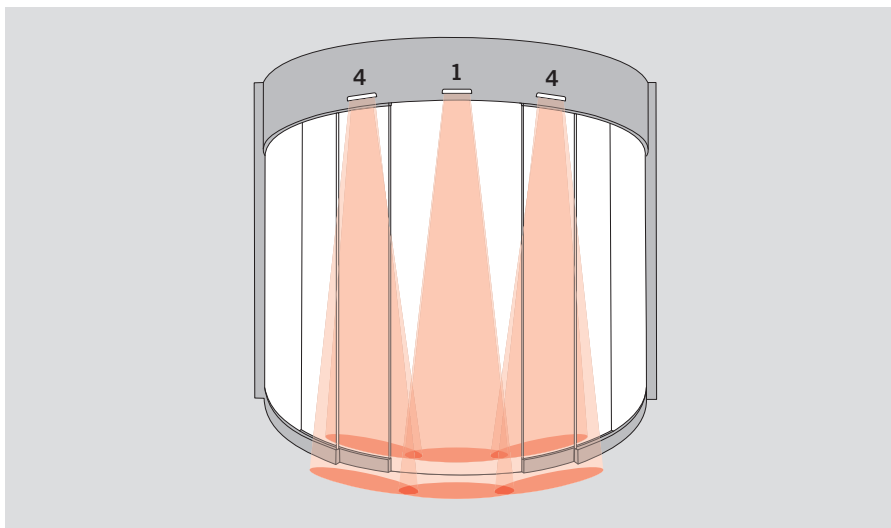
Connection diagram



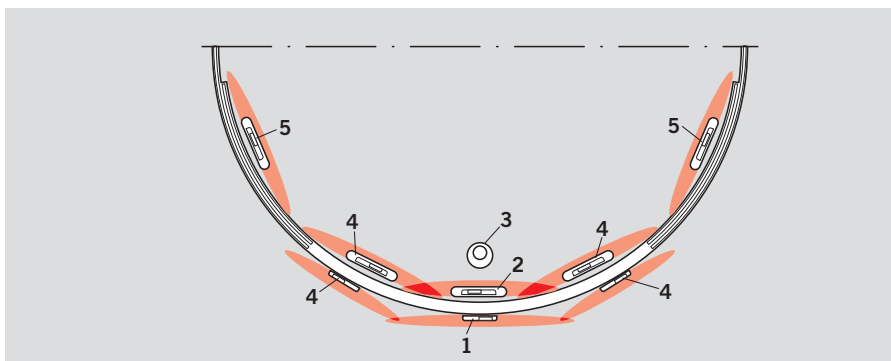
- 1 Feeder
- 2 Internal pushbutton
- 3 Key switch
- 4 Program switch
- 5 Emergency pushbutton (Emergency Off function or Emergency Opening function respectively)

The external Emergency Off pushbutton must be installed close to the door. The maximum cable length amounts to 30 m. The cable can be laid together with the cable for the program switch. The maximum length of the cable connecting the external program switch is 30 m. If the cable is laid with other cables, it must be provided with a shield.

Safety equipment



- 1 External radar motion detector/combined sensor, external (compulsory with DIN 18650)
- 2 Integrated infrared safety sensor to monitor the passage area
- 3 Internal radar motion detector
- 4 Infrared safety sensor (optional, compulsory with DIN 18650)
- 5 Infrared safety sensor to monitor the secondary closing edges (optional)



Program switch

When combining the system with a program switch out of the DORMA accessory range, the automatic door system even meets individual requirements and offers easy handling.

These program switches are available in various designs have been conceived for all kinds of demands.

Furthermore they offer various options, from a mechanical to a full-electronic version alternatively also lockable via Euro profile half-cylinder or in a full-electronic way via code.

- Up to 5 different functions: Off, Automatic, Exit Only, Partial Open, Permanent Open
- Electronic program switches in System 55 design to cope with the highest aesthetic demands



Program switches for sliding door operators

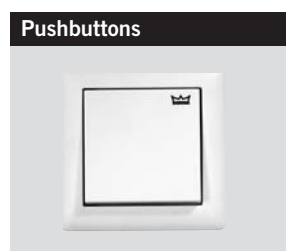
Designation	Specification	Installation system	Order No.
PG-S2	5-position, lockable, aluminium, white, flush-mounting, 80 x 80 x 40 mm	Gira S-Color	19135602150
EPS-S	Full-electronic program switch in System 55 design, 5-position, lockable via code or additional key switch TL-ST S55, membrane keypad, aluminium-coloured, white, flush-mounting, 80 x 80 mm	System 55	16556901150



Program switches for sliding door operators in emergency exits and escape routes (FST)

Designation	Specification	Installation system	Order No.
PG-FST1	5-position, lockable, aluminium, white, flush-mounting, 80 x 80 mm	Gira S-Color	19135603150
PG-FST2	5-position, lockable via Euro profile half-cylinder, white, aluminium, flush-mounting, 105 x 80 x 65 mm	Deutsche Solenoid	19142001170
	box for surface-mounting:		19142201170
EPS-FST	Full-electronic program switch in System 55 design, 5-position, lockable via code or additional key switch TL-ST S55, membrane keypad, white, aluminium-coloured, flush-mounting, 80 x 80 mm	System 55	16556801150

Pushbuttons



Pushbuttons

Designation	Specification	Installation system	Order No.
Pushbutton	Single-pole changeover contact, standard frame, white, flush-mounting	System 55	19144701170



Key switch

Designation	Specification	Order No.
KT 3-1	1 NO contact, with Euro profile half-cylinder (can be replaced by any half-cylinder of a master-key system), you can only withdraw the key when it is in zero position, aluminium, metal, 75 x 75 x 60 mm	
KT 3-1	flush-mounting	05054531332
KT 3-1	surface-mounting	05054631332
KT 8	Lettering "Auf, Zu", 2 NO contacts, with Euro profile half-cylinder can be replaced by any half-cylinder of a master-key system), you can only withdraw the key when it is in zero position, aluminium, metal, 75 x 75 x 60 mm	
KT 8	flush-mounting	05054831332
KT 8	surface-mounting	05054931332

Emergency pushbutton



Designation	Specification	Installation system	Order No.
NAT 1	To interrupt the automatic movement of the door. Emergency pushbutton (Function: Emergency Off) for automatic door operators. Manufactured according to ZH 1/494 (German Guidelines for power-operated windows, doors and gates) and BGR 232 (German Employer's Liability Insurance Association Rule) as well as DIN 18650 (German Industrial Standard). Red knob with yellow centre insert. Maximum load current: max. 10 A at 230 V AC. NO contact: 1, NC contact: 1, white frame, flush-mounting, 80 x 80 mm	System 55	90400025
NAT 2*	Function: "Emergency Open" with green knob, NO contact: 1, NC contact: 1, Maximum load current: 10 A at 230 V AC, white frame, flush-mounting, 80 x 80 mm	System 55	90400035

*no illustration

Active infrared safety sensor

Active infrared system to protect the passage area and the secondary closing edges

of sliding doors. To detect the presence of people and objects.



Designation	Specification	
AIR 30/31	Including background evaluation, black	16503601170
AIR 30-H/31	Including background suppression, black	16503701170

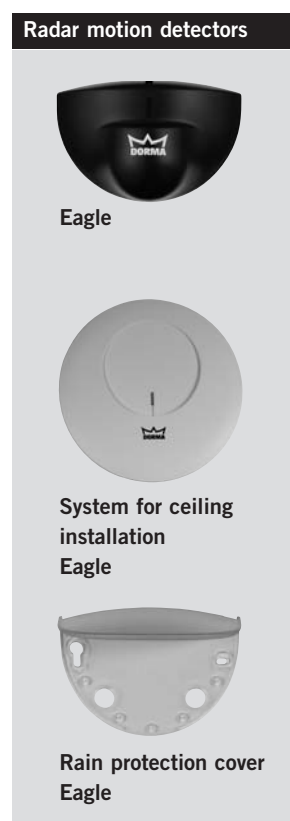
IRIS ON black

Radar motion detectors

The user-friendliness of automatic doors depends a lot on what kind of activator is used and its construction.

The DORMA sensor range combines the flexibility that is required for the different fields of application with reliability and the highest level of user friendliness.

Furthermore it effectively detects moving people or objects in order to activate (open) automatic doors.



Designation	Specification	Order No.
Standard motion detectors		
Eagle 2	Standard, black	16503201170
Motion detectors with direction recognition		
Direction recognition for perfectly controlled opening and closing cycles.		
Eagle 1	Direction recognition, black	16503101170
Self-monitoring motion detector		
(FST application – for doors with application in emergency exits and escape routes)		
Radar motion detector for doors in emergency exits and escape routes with self-monitoring function and electronic systems in redundant design.		
Eagle 3-N	Self-monitoring, direction recognition, black	16551601170
Accessories for Eagle detectors		
System for ceiling installation, white		16502901170
Rain protection cover, transparent		05090731332

Combined sensors

To activate (open) and protect automatic sliding doors. This system is designed to substitute light barriers with the aid of an integrated

active infrared function. This combined sensor opens sliding doors via radar and protects the main and secondary closing edges

with the aid of an active infrared system.

Aktiv-Infrarotmelder



Activ8 One on / Activ8 Three on

Designation

Specification

Activ8 One on

Direction recognition, black

Activ8 Three on

Direction recognition, self-monitoring, suitable for application on FST doors (fire and smoke doors), black



DORMA BST in segmental design

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