ES 200-2D

**Sliding door operator
for emergency exits**

DORMA

Flexible, simple and modular – with safety included

With its ES 200, DORMA is able to offer a new, innovative sliding door operator system covering all applications and service requirements.
In the case of emergency exits and escape doors, the ES 200-2D version featuring DORMA *DualDrive* technology offers an impressive solution with outstanding operational reliability.

The modular system
The modular design of the ES 200 provides an ideal basis for implementing new ideas and individual concepts in the design and construction of sliding door systems.
The identical mechanical components can be used in all three versions of the operator (ES 200-2D, ES 200 and ES 200 *Easy*). DORMA has also opened up a new dimension with its control system. Now there is no longer any need to replace components when you want to expand the functionality of your system.

In future, "docking" will be the order of the day. The modular control system comprises of the basic control module (BM), the *DualDrive* module (2D unit) and the function module (FM). Consequently, upgrading in accordance with individual customer requirements can be carried out without problems.
Particularly impressive is the prefabricated *MiniDriveUnit*, industrially tested and equipped with all the necessary electrical and electronic components.

DualDrive for redundant safety
The innovative and powerful *DualDrive* system offers double safety through its particularly dynamic drive power based on a predetermined acceleration/deceleration operational control curve. It consists of a double-protected control system, an extra-powerful motor and an additional auxiliary coil for emergencies. Delicate and unreliable

wearing parts such as rubber ropes/bungees, clutches or springs are out. Instead, the system guarantees durable, disruption-free functional dependability while at the same time significantly reducing the amount of maintenance input required. Maximum operational reliability in all situations is also ensured by a continuous self-monitoring function which covers the entire system.

A system for the future
With this system you are investing in the future. You also have the security derived from our decades of experience in the automatics business – a history that sets DORMA apart as the market leader in drive and control systems for doors. The ES 200-2D corresponds to all the latest European and German standards and safety regulations: AutSchR (Regulations governing the use of automatic sliding doors in escape routes), R238 (ZH 1/494) and DIN 18650.

The required safety devices according to DIN 18650 (Germany) result from the respective risk assessment.

Delivery formats
The ES 200-2D is available as a component kit, as a complete, pre-assembled operator or ready integrated in all DORMA sliding door systems.

Accessories
DORMA is able to provide program switches, activators and door profiles all perfectly matched to the operator as ideal complementary components.

Features and advantages

– Modular, flexible system

– With DORMA *DualDrive:* Double-protected drive system, low in maintenance with redundant control and powerful 2D motor

– Industrially prefabricated and tested *MiniDriveUnit*

– Modular control system upgradeable with additional functional modules

– Integrated DCW (DORMA Connect and Work) bus system for easy integration of DORMA DCW sensors and actuators

– ES 200-2D commissioning via the integrated display

– Can be combined with all customary door profiles

– Fully comprehensive range of accessories

– Reliable investment due to compliance with all relevant European and German standards

Door parameters	ES 200-2D
1-panel sliding door	
– Clear passage width LW	900 – 1800 mm
– Door panel weight, max.	1 x 150 kg
2-panel sliding door	
– Clear passage width LW	1000 – 3000 mm
– Door panel weight, max.	2 x 130 kg

Technical data	
Height	100 and 150 mm
Overall depth	180 mm
Opening and closing force max. 150 N	●
Opening speed (incremental setting)	10 – 70 cm/s
Closing speed (incremental setting)	10 – 50 cm/s
Hold-open time	0,5 – 30 sec.
Mains voltage, frequency	230 V, 50/60 Hz
Power consumption	180 W
Class of protection	IP 20
Compliant with EU low-voltage directives	●
Manufacture according to ISO 9001:2000	●

Basic module (BM)	
Modular design	●
Microprocessor-controlled function programs	
– Off	●
– Automatic	●
– Permanent open	●
– Partial opening	●
– Exit only	●
– Night-bank control	●
Connections for	
– electro-mechanical lock	●
– light barriers	●
Adjustment of all basic parameters via integrated display and pushbuttons	●
PDA parameter setting	●
24 V output for external loads	●
Read-out error memory with error codes	●
DCW bus interface	●
Rechargeable battery pack for emergency operation	●

DualDrive module (2D unit)	
Self-monitoring	●
For actuation of the emergency escape function	●
Redundant safety	●

Function module (FM) – optional extra	
Pharmacy control	●
Door status detection (triple-mode)	●
Main and secondary closing edge protection	●
Emergency closing	●
Bell contact	●
Airlock control	●
Synchronising mode	●

DIN 18650 function module – optional	
The DIN 18650 function module* enables the tested monitoring of the secondary closing edges in order to comply with the German standard DIN 18650.	○

Additional equipment	
Electro-mechanical lock (bistable)	○
Manual release of electro-mechanical lock	○
Light barriers	○
Backup battery pack (emergency opening, emergency closing)	○
Module for coupling to EIB or LON building control systems*	○

* Please ask your Sales Consultant for series start date.

● standard
○ optional

Always on the safe side with emergency exit doors:

DualDrive

The DORMA DualDrive concept is particularly impressive with its superior system innovations.

The technical lead offered by the DORMA DualDrive is the culmination of a combination comprising smart control electronics and a redundant motor system.

Delicate and disruptive rubber rope and bungee systems, clutches or springs for the emergency opening function have been banished from the scene. This guarantees durable, disruption-free operability while at the same time significantly reducing maintenance input and expense.

Maximum operational reliability in all situations is guaranteed by the fact that the system self-monitors on a continuous basis.

DORMA *DualDrive* – more safety right from the start.
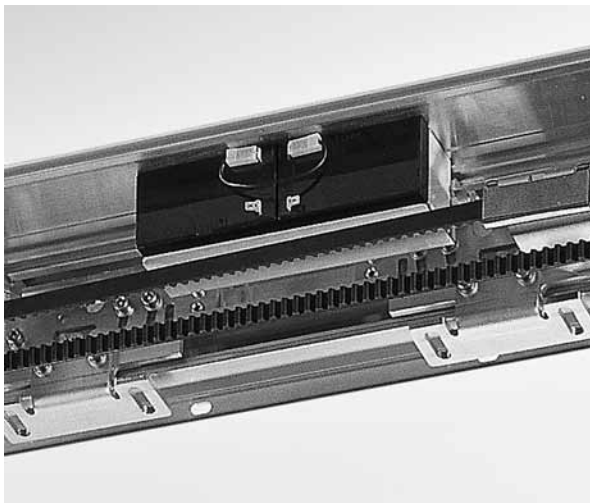
Emergency operation with integrated backup battery pack

DORMA DualDrive in brief:

■ More functional reliability in emergency exit doors thanks to redundant motor and control system to replace rubber rope/bungee, clutch and spring systems.

■ High flexibility in the planning and construction of emergency exit sliding doors.

■ Integrated rechargeable back-up battery module for reliable, mains-independent opening and closing of the door in any situation.

■ Additional manual unlocking mechanism available as optional extra.

■ Reliable investment for the future thanks to satisfaction of the very latest European and German standards for automatic doors in emergency exits and escape routes (prEN 12650)

■ Enhanced efficiency thanks to simplified installation and low-maintenance components

■ Comprehensive service and support package

Previously: Safety provided by a bungee-type actuator

Today: Safety with the *DualDrive*

The German TÜV certificate for emergency exit sliding doors with *DualDrive* technology validates the primary technical specifications and place of manufacture.

DORMA emergency exit doors offer additional safety by virtue of the fact that they are manufactured in production facilities subject to third-party QA verification.

ES 200-2D – the emergency exit operator for individual door design

Door variants with ES 200-2D, 100 mm height

with MANET single-point fixings

with fine frame profiles G clamp-type glazing rail

with fine frame profiles G shoe-type glazing rail

with double glazing profiles type G-Iso

with standard frame profiles type R

**DORMA *DualDrive* System –
the powerful, double-secure
emergency exit operator solution**

The door variants on this page are
shown as corridor installation with
LM girder.
See page 8 for profiles for wall
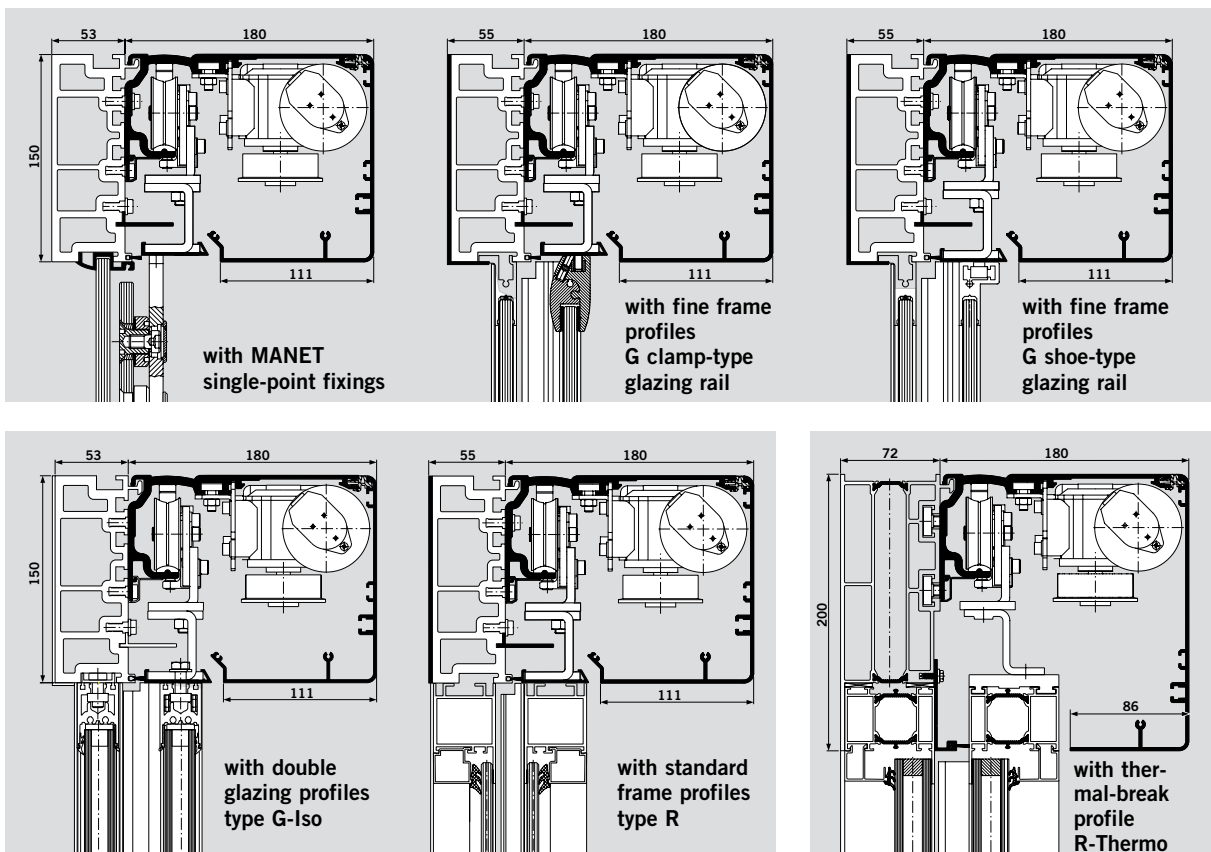face fixing

Door variants with ES 200-2D, 150 mm installation height and special "profile" version

with MANET single-point fixings

with fine frame profiles G clamp-type glazing rail

with fine frame profiles G shoe-type glazing rail

with double glazing profiles type G-Iso

with standard frame profiles type R

with thermal-break profile R-Thermo
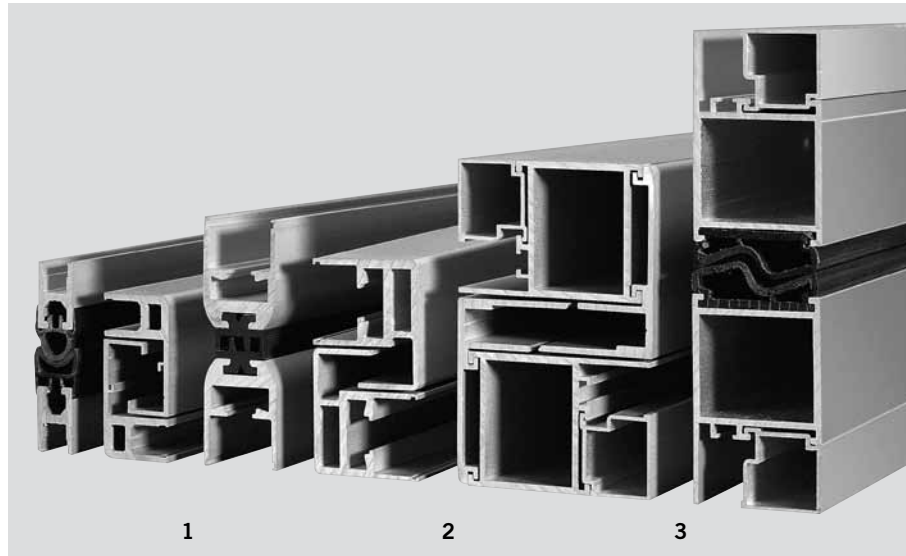
Door profiles

DORMA supplies door profile for doors in full-glass and for framed doors as the optimum addition to the ES 200-2D.
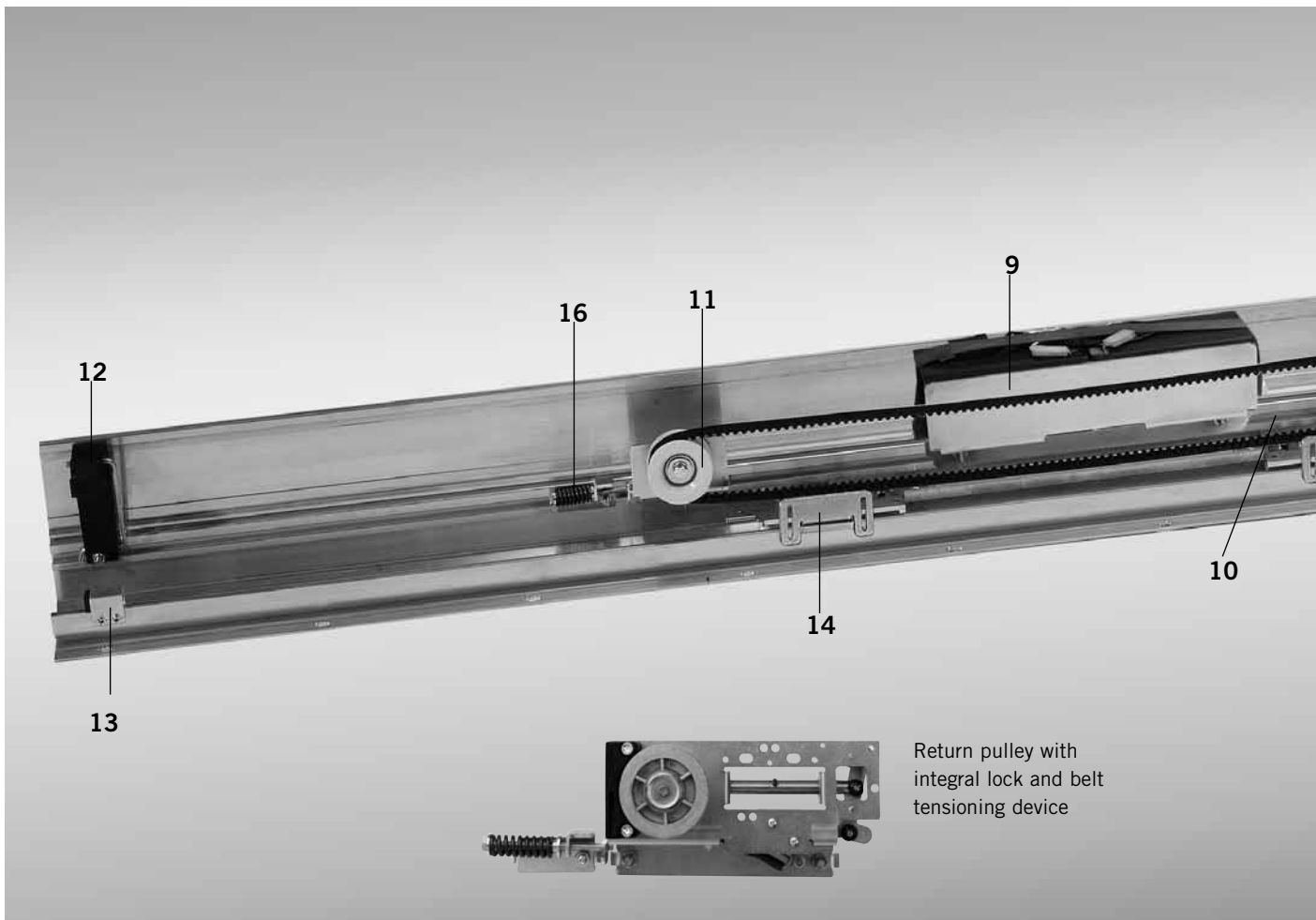Manet single point fixings and a glazing rail complement the program.

1 Fine frame profile system type G
2 Double glazing profile system type G-Iso
3 Standard frame profile type R

1   2   3

MANET single-point fixings

Return pulley with
integral lock and belt
tensioning device

Profiles for corridor installation, 100 mm
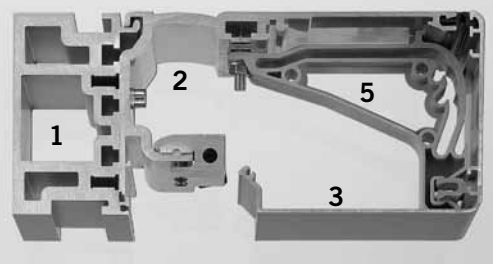
Profiles for wall face fixing, 100 mm
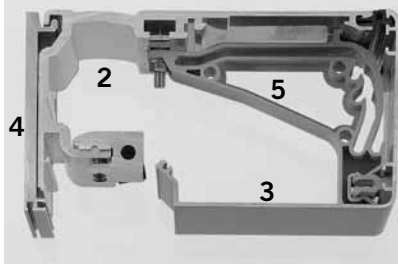
Profile for 100 mm
and 150 mm height,
for corridor or wall face
fixing guarantees adap-
tation for all possible
applications.

The basic mechanical
system, with a low
number of components,
is the same for both
heights.

Profiles for corridor installation, 150 mm
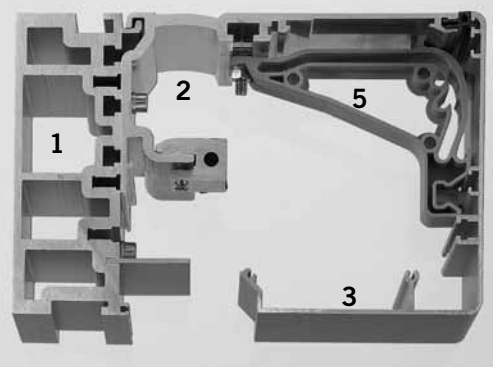
Profiles for wall face fixing, 150 mm
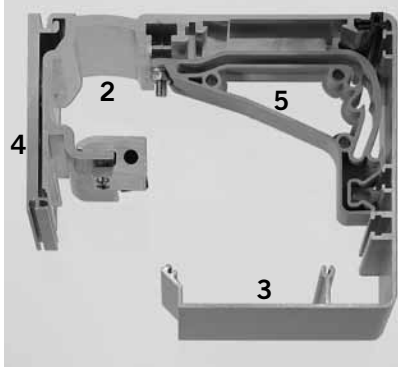
1 LM girder
2 Basic operator profile
3 Interior cover, 100 or
   150 mm high
4 Wall face fixing
   profile
5 Service cover holder
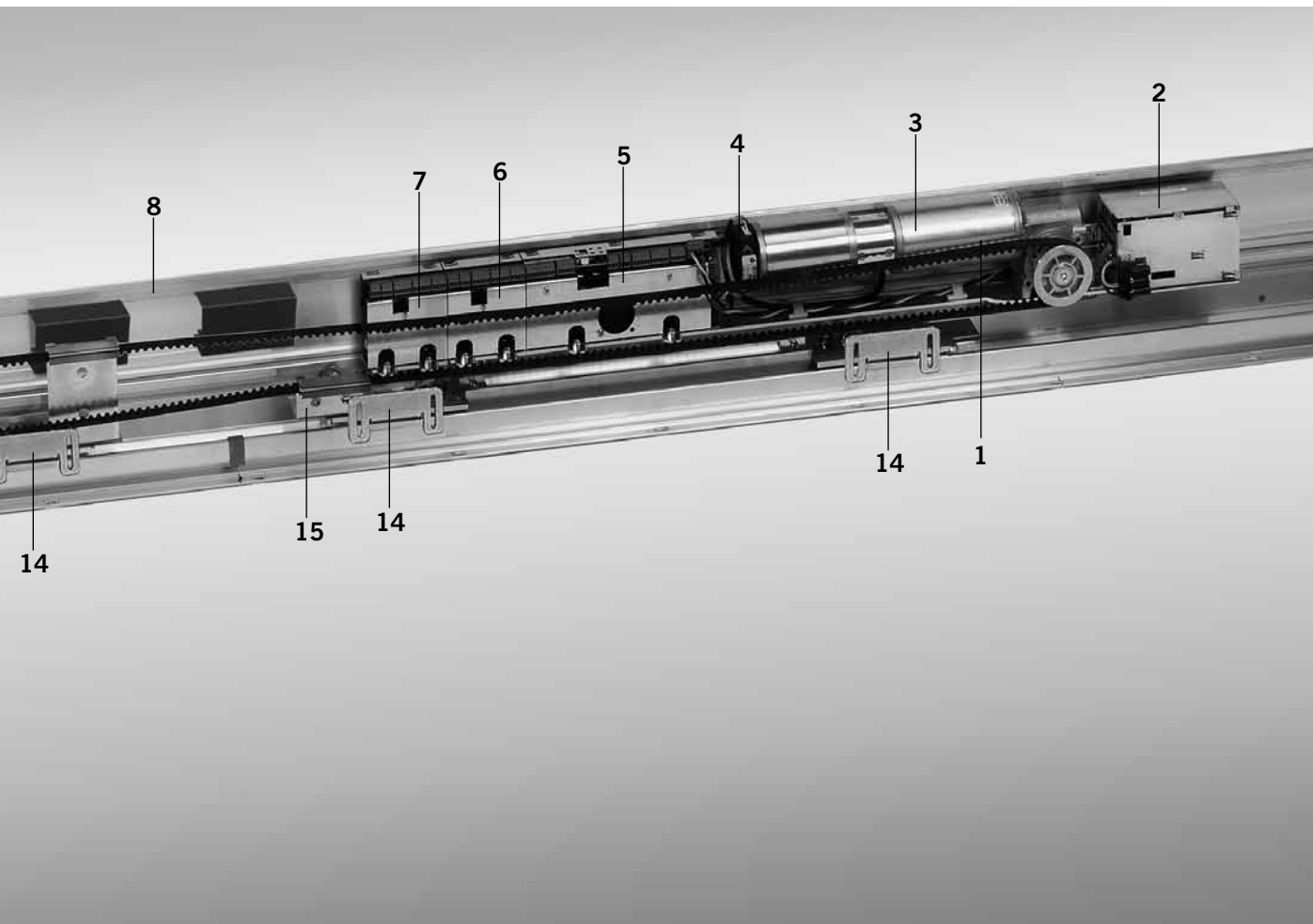
MiniDriveUnit with DualDrive
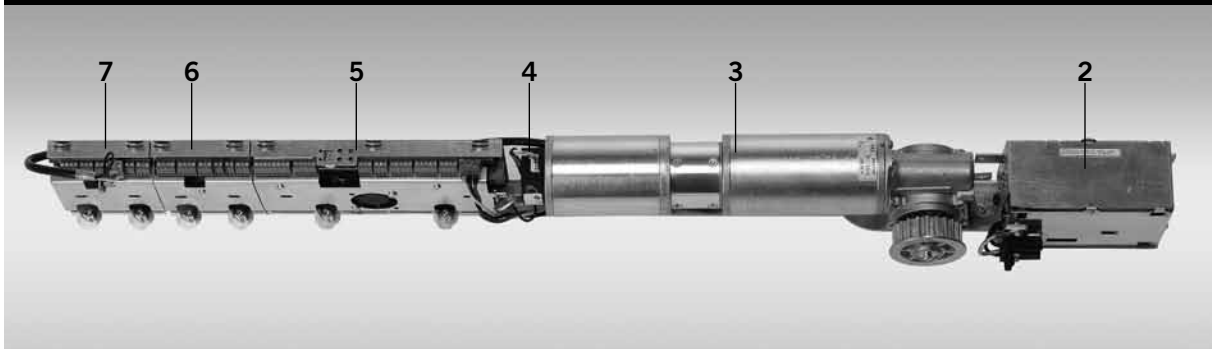
At the heart of the ES 200-2D is its prefabricated **MiniDriveUnit** with **DualDrive** technology.

It has been industrially tested with all the requisite electrical and electronic components, thus greatly facilitating the assembly, installation and maintenance of the door operator.

Components

1	**MiniDriveUnit with *DualDrive***	**8**	Track and mounting profile
2	Power supply unit	**9**	Battery pack (optional)
3	Dual Drive Motor	**10**	Carrier
4	Decoder	**11**	Return pulley
5	Basic control module (BM)	**12**	Service cover holder
6	*DualDrive* module (2D unit)	**13**	End stop
7	Function module (FM)	**14**	Door bracket with adjustment device
		15	Belt connection
		16	Belt tensioning device

Connections

6 x 0.8 mm^2

each 8 x 0.8 mm^2

Activator
(combined sensor:
activator/safety
sensor)

6 x 0.8 mm^2

Drive unit
Control unit

3 x 1.5 mm^2

2 x 0.8 mm^2
100 m

10 x 0.8 mm^2
100 m

4 x 0.8 mm^2
100 m

2 x 0.8 mm^2
100 m

16 A

230/240 V AC
50/60 Hz

Emergency
pushbutton,
close to door

Program
switch

Outside:
Key switch,
code card reader
with floating
contact or sim.

Inside:
Pushbutton
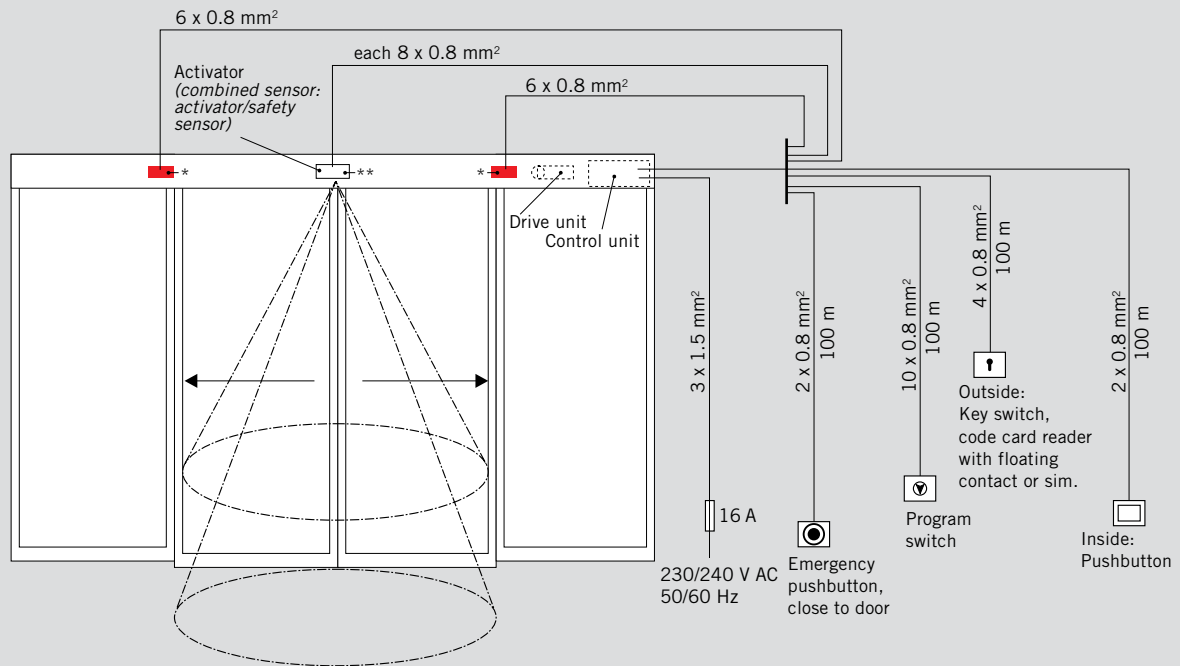
*Safety sensors to monitor the secondary closing edges in accordance with DIN 18650
**Safety sensors to monitor the main closing edge in accordance with DIN 18650

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

Program switches	Designation	Specification	Installation system	Order No.
PG-S1	PG-S1	5-position, aluminium, white, UP, 80 x 80 x 40 mm	Gira S-Color	19135401150
PG-S2	PG-S2	5-position, lockable, aluminium, white, flush-mounting, 80 x 80 x 40 mm	Gira S-Color	19135602150
	PG-FST2*	5-position, lockable via Euro profile half-cylinder, also suitable for FST systems, aluminium, white, for flush-mounting, 105 x 80 x 65 mm. Box for surface-mounting: 19142201170	Deutsche Solenoid	19135602150
EPS-S	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
	For header installation** PS-FST3	5-position, lockable, also suitable for FST systems		25006014150

 * Illustration see page 7
** no illustration

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

Program switches		Designation	Specification	Installation system	Order No.
		PG-FST1	5-position, lockable, aluminium, white, flush-mounting, 80 x 80 mm	Gira S-Color	19135603150
PG-FST1		PG-FST2	5-position, lockable via Euro profile half-cylinder, white, aluminium, flush-mounting, 105 x 80 x 65 mm, Box for surface-mounting: 19142201170 (see page 11)	Deutsche Solenoid	19142001170
PG-FST2		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
EPS-FST		**For header installation* PS-FST3**	5-position, lockable		25006014150

* no illustration

Pushbuttons
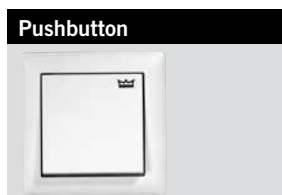
Key switch

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

Key switch

Key switch	Designation	Specification	Order No.
	KT 8	Lettering "Auf, Zu" (German for "Open/Closed"), 2 NO contacts, with Euro profile half-cylinder (can be replaced by any master-key system half-cylinder), key only retractable in neutral position, aluminium, metal, 75 x 75 x 60 mm	
KT 8 AP/UP	KT 8 UP	flush-mounting	05054831332
	KT 8 AP	surface-mounting	05054931332

Key switch TL-ST key switch out of STA range

Key switch	Designation	Specification	Installation system	Order No.
	TL-ST S55	Switch with single-pole changeover contact, for Euro profile half-cylinder by others to DIN 18252, locking cam centre 30 – 32.5 mm, overall length 40.5 – 43,5 mm, Locking cam position left (90°), incl. cover for System 55, not suitable for box for surface-mounting, not including Euro profile half-cylinder, **not including frame**		
TL-ST S55	TL-ST S55 W	white	System 55	56330710
	TL-ST S55 S	silver	System 55	56330701
	TL-ST S55 A	anthracite	System 55	56330715

Switches

Switches			
Designation	**Specification**	**Installation system**	**Order No.**
On / Off switch	white, aluminium, flush-mounting, 80 x 80 mm	Gira S-Color	19135403150
Radar switch	„MAGIC SWITCH", proximity-type radar switch responds to movement, for flush-mounting, 80 x 80 mm		05076831332

Key switches

Designation	Specification	Order No.
KT 3-2	1 NO contact with Euro profile half-cylinder, can be replaced by any master key system half-cylinder, key only retractable in neutral position, interchangeable cover, lettering "Ein, Aus" (German for "On/Off"), aluminium, for flush-mounting: 125 x 100 mm, for surface-mounting: 70 x 90 mm	05054731332
KT 3-2.1*	2 changeover contacts, with Euro profile half-cylinder, replaceable by any master-key system half-cylinder, key only retractable in neutral position, lettering "Ein, Aus" (German for "On/Off"), aluminium, for flush-mounting: 125 x 100 mm, for surface mounting: 70 x 90 mm	05032631332

*no illustration

KT 3-2

Emergency pushbutton

Emergency pushbutton			
Designation	**Specification**	**Installation system**	**Order No.**
	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.		
NAT 1	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
	Highly-illuminated emergency pushbutton environment with visual locking status indication, optical and acoustic alarm via yellow flashlight and integrated alarm siren, sabotage-proof, behind glass, **not including frame**		
TL-N S55	NO contact: 1, NC contact: 1, Maximum load current: 1 A at 24 V DC, flush-mounting, 80 x 80 mm	System 55	56330500
NAT 3*	Behind glass, NO contact: 1, NC contact: 1 for flush-mounting, 120 x 87 mm		90400023
NAT 4	NO contact: 1, NC contact: 1, for surface-mounting, 68 x 68 mm		05027031332

* no illustration

NAT 1

TL-N S55

NAT 4

Infrared detectors

These detectors are designed to safeguard automatic doors by detecting moving people or objects

Light barriers

	Light barriers		
LB 03	Designation	Specification	Order No.
		To safeguard the passage area of sliding doors by detecting the presence of people and objects	
	LB 03	Counter light barrier comprising transmitter and receiver	05102331332

Active infrared detector

	Active infrared detector		
AIR 30/31 **AIR 30-H/31**	Designation	Specification	Order No.
		Active infrared system to safeguard the passage area and the secondary closing edges of sliding doors. Designed to detect the presence of people and objects	
	AIR 30/31	Including background evaluation, black	16503601170
	AIR 30-H/31	Including background suppression, black	16503701170
	WH 30	Rain protection cover, black	16500901170

Crystal Presence

	Crystal Presence		
Crystal Presence **System for ceiling mounting**	Designation	Specification	Order No.
		– For improved protection of passage areas and secondary closing edges of sliding doors – Designed to detect the presence of people and objects	
	Crystal Presence	Presence detection curtain for improved protection thanks to exactly adjustable detection range, black	16504301170
	System for ceiling mounting	for Crystal Presence, white	05094731332

Combined sensors

|	Combined sensors		
Activ8.2 **Jupiter**	Designation	Specification	Order No.
		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 via an active infrared system.	
	Activ8.2	Direction recognition, black	16518301170
	Activ8.3-N	Direction recognition, self-monitoring, suitable for application on FST doors (fire and smoke doors), black	16555001170
	Jupiter	Direction recognition with cross-traffic suppression, black	16563201170
	Jupiter SE	Direction recognition with cross-traffic suppression, self-monitoring, suitable for application on FST doors (fire and smoke doors), black	16563301170

Radar motion detectors

Not-Befehlseinrichtung	Designation	Specification	Colour	Order No.

Eagle

Merkur

System for ceiling installation Eagle

Rain protection cover Eagle

Special bracket (Eagle)

System for ceiling installation (Merkur)

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.

Standard motion detectors

Designation	Specification	Colour	Order No.
Eagle 2	Standard	black	16503201170
		white	16503203170
		silver	16507502170
Merkur M	Standard	black	16537501170

Motion detectors with direction recognition
Direction recognition for perfectly controlled opening and closing cycles.

Designation	Specification	Colour	Order No.
Eagle 1	Direction recognition	black	16503101170
		white	16503103170
		silver	16503102170
Merkur	Cross-traffic suppression with direction recognition	black	16532201170

Self-monitoring motion detector (FST application – for door with application in emergency exits and escape routes)
Radar motion detector for doors in emergency exits and escape routes with self-monitoring function and electronics in redundant design

Designation	Specification	Colour	Order No.
Eagle 3-N	Self-monitoring, direction recognition	black	1655161170
		white	1655163170
		silver	1655162170
Merkur SE/R	Self-monitoring, direction recognition with cross traffic suppression	black	16532201170

Accessories for Eagle detectors

	Colour	Order No.
System for ceiling mounting	white	16502901170
Rain protection cover	transparent	05090731332
Infrared remote control to adjust all radar motion detectors	black	16503001170
Special bracket, for projections of up to 500 mm	black	19138903150

Accessories for Merkur-type detectors

	Colour	Order No.
System for ceiling installation (Merkur)	white	05102231332

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DORMA AutoSwitch transponder

DORMA AutoSwitch	Designation	Specification		Order No.
	The "active" transponder system. The transponder sends a pulse to the control unit as soon as it enters the receiver range, which amounts to approx. 2.5 m. This system is especially suitable for areas where a manual operation of the system is to be excluded. Thanks to its range it is the perfect access control system for doors used by wheelchair drivers.			
	DORMA AutoSwitch	Receiver/control unit, surface-mounted version, white		16571101175
		Programming-(Transponder-) key, yellow		16571201175
		Standard-(Transponder-) key, blue		16571301175

Frames and boxes for surface-mounted pushbuttons and switches
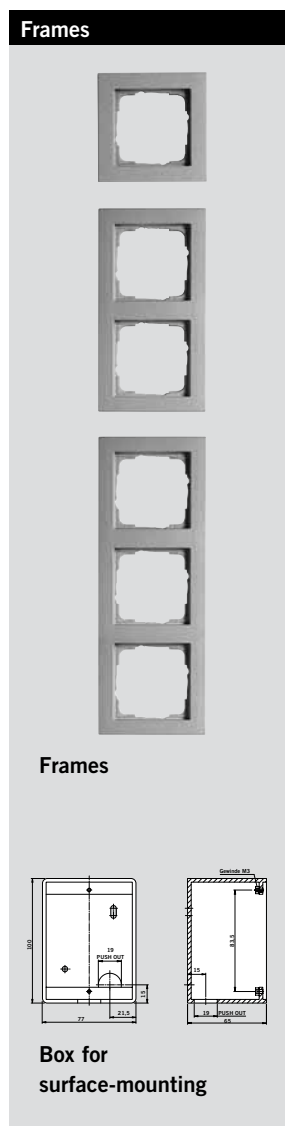
Frames	Designation	Specification	All dimensions in mm (W x H x D)	Installation system	Order No.
	System 55	**Cover frame (STA range)**			
	FR-S55 1	Single-type frame, Standard 55, white	80.7 x 80.7	System 55	56391110
	FR-S55 2	Double-type frame, Standard 55, white	151.8 x 80.7	System 55	56391210
	FR-S55 3	Triple-type frame, Standard 55, white	223.3 x 80.7	System 55	56391310
	FR-E2W 1	Single-type frame, E2 55, white	80.8 x 80.8	System 55	56392110
	FR-E2W 2	Double-type frame, E2 55, white	151.9 x 80.8	System 55	56392210
	FR-E2W 3	Triple-type frame, E2 55, white	223.4 x 80.8	System 55	56392310
	FR-E2S 1	Single-type frame, E2 55, silver	80.8 x 80.8	System 55	56392101
	FR-E2S 2	Double-type frame, E2 55, silver	151.9 x 80.8	System 55	56392201
	FR-E2S 3	Triple-type frame, E2 55, silver	223.4 x 80.8	System 55	56392301
	FR-E2A 1	Single-type frame, E2 55, anthracite	80.8 x 80.8	System 55	56392115
	FR-E2A 2	Double-type frame, E2 55, anthracite	151.9 x 80.8	System 55	56392215
	FR-E2A 3	Triple-type frame, E2 55, anthracite	223.4 x 80.8	System 55	56392315

Please see STA price list for further frames and versions.

Frames

Designation	Specification	All dimensions in mm (W x H x D)	Installation system	Order No.
System 55	**Boxes for surface-mounting for Standard 55 frames**			
ST-AP 55-1*	Single-type frame, pure white, RAL 9010	81.0 x 52.5 x 44.5	System 55	515853332
ST-AP 55-2*	Double-type frame, pure white, RAL 9010	152.0 x 81.0 x 44.5	System 55	515863332
ST-AP 55-3*	Triple-type frame, pure white RAL 9010	224.0 x 81.0 x 44.5	System 55	515873332
Box for surface-mounting	For mechanical program switch PG-FST2 with Euro profile half-cylinder Single-type frame, white	100 x 80 x 65	Deutsche Solenoid	19142201170

Box for surface-mounting

* no illustration