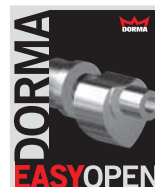




Cam action  
door closer system

# DORMA TS 93



reddot design award  
winner 2005

## DORMA TS 93 – Cam action door closer system



### Versatile and elegant

The TS 93 cam action door closer system provides a high-quality architectural solution for all project application requirements. The proven DORMA technology featuring the heart-shaped cam ensures exceptional ease of opening.

The new Contur design offers an even more impressive specification - thanks to

- concealed fixings
- height-adjustable G-N slide channel
- delayed closing action as standard
- smoke detector integrated in the slide channel
- simple, fast installation

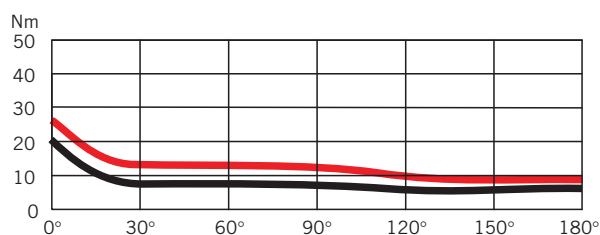
### Rapidly decreasing opening force

The DORMA TS 93 system's unique cam technology sets it apart from conventional door closer systems. The resistance encountered when opening the door is instantly reduced, offering an easy opening action much appreciated by, in particular, children and older people.



**Force profile**  
DORMA TS 93  
(Spring strength: EN 3)

— Opening force  
— Closing force





**Further information,  
specification texts**

Additional information e.g. specification texts, drawings, installation instructions on many products can be accessed via electronic media (Internet, CD ROM).

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## The perfect project solution for all application needs

The TS 93 cam action door closer system sets new standards in user convenience in project applications. The proven DORMA technology of the heart-shaped cam ensures exceptional ease of opening.

The TS 93 series comprises a modular system which enables just a few door closer models to be combined with a number of different slide channels to meet virtually every conceivable functional requirement. Doors of varying designs can be equipped for a wide range of different applications.

### Plus points...

#### ...for the trade

- Clear product allocation ensures use of the right models for the right applications.
- Identical door closer model for single and double doors

#### ...for the installer

- The TS 93 system is suitable for all fixing positions.
- Mounting bracket with universal fixing hole pattern for optimal fixing.
- Simple, fast installation.

#### ...for the specifier/architect

- High-quality design ensures an ideal solution for all project applications.
- Harmonious appearance thanks to integral smoke detector.
- Available in a wide range of colours and finishes.

#### ...for the user

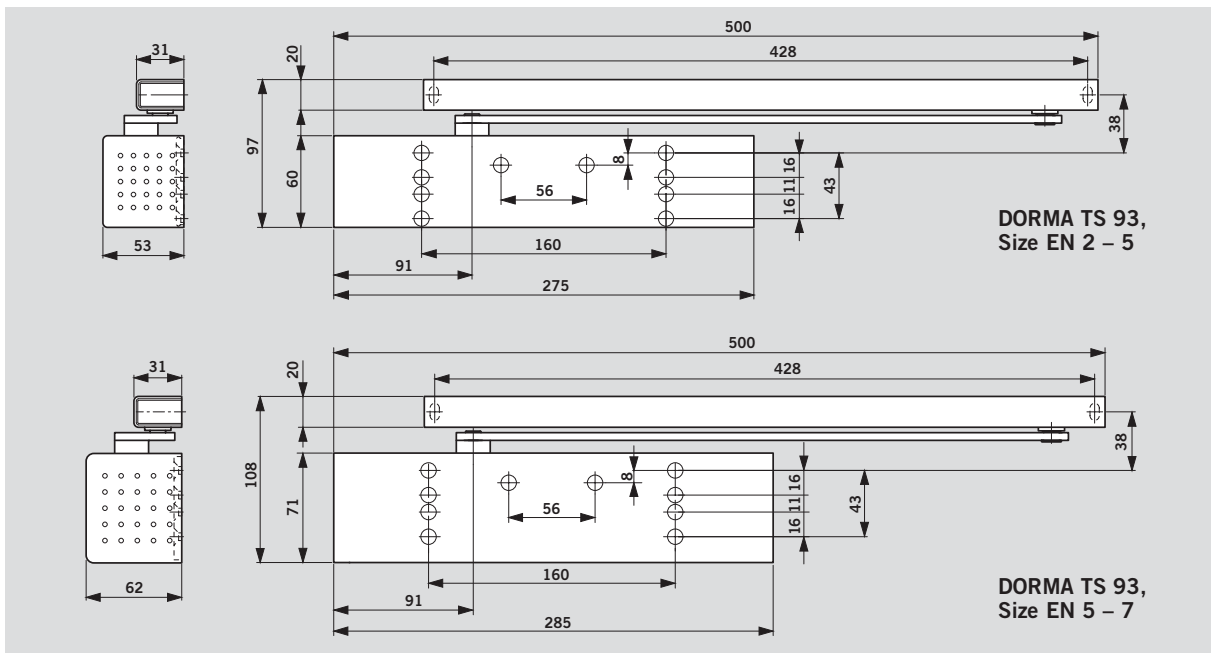
- Easy opening action and fully controlled closing.
- Smoke detector with convenient service and maintenance indicator.
- Adjustable hydraulic functions for easy adaptation to each specific door situation.

Data and features		TS 93 B/G <sup>1)</sup>	
		EN 2-5	EN 5-7
Variable closing force	Spring strength		
Standard doors <sup>2)</sup>	≤ 1250 mm	●	–
	≤ 1600 mm	–	●
External doors, outward opening <sup>2)</sup>	≤ 1250 mm	●	–
	≤ 1600 mm	–	●
For fire and smoke check doors <sup>2)</sup>	≤ 1250 mm	●	–
	≤ 1600 mm	–	●
Non-handed		●	●
Arm assembly type	Standard	–	–
	Slide channel	●	●
Closing force variable by means of adjustment screw		●	●
Closing speed adjustable by valve		●	●
Latching speed adjustable	at arm	–	–
	at valve	●	●
Backcheck (BC/ÖD)	adjustable at valve	●	●
Delayed action (DC/SV) adjustable at valve		●	●
Hold-open		○	○
Weight in kg		3,5	5,2
Dimensions in mm	Length (L)	275	285
	Overall depth (B)	53	62
	Height (H)	60	71
Door closer tested to EN 1154			●
Hold-open devices tested to EN 1155			●
Door co-ordinators tested to EN 1158			●
CE mark for building products			●

● yes – no ○ option

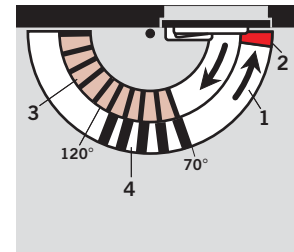
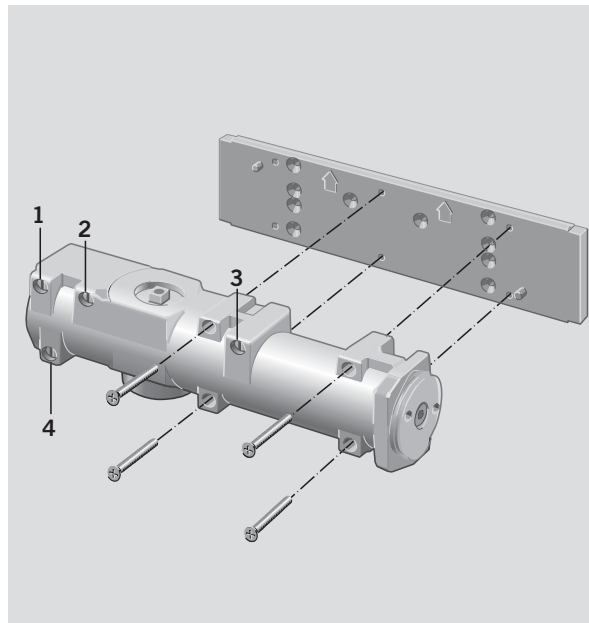
<sup>1)</sup> B = Standard model for pull-side door leaf fixing/push-side transom fixing  
G = Special model for push-side door leaf fixing/pull-side transom fixing.

<sup>2)</sup> For applications involving particularly heavy or wide doors, and doors which have to close against wind resistance, the next highest door closer size should be selected, or the closing force adjusted to a higher setting.



**Standard mounting backplate with universal fixing hole system**

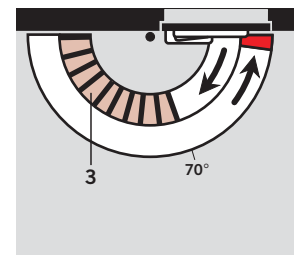
This mounting backplate with its universal hole system, including hole pattern to supplementary sheet 1 of DIN EN 1154 A, ensures ideal fixing whatever the conditions and irrespective of the door type. The fixing hole patterns are the same for both sizes of the DORMA TS 93. Additional mounting plates/brackets are no longer required. Alignment dowels on the mounting backplate facilitate location of the closer body.



- 1 Fully controlled closing action with adjustable speed
- 2 Adjustable latch speed
- 3 Adjustable backcheck
- 4 Adjustable delayed action

**Backcheck**

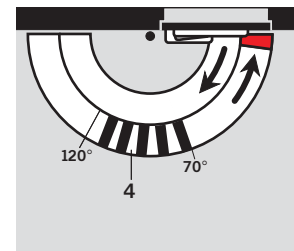
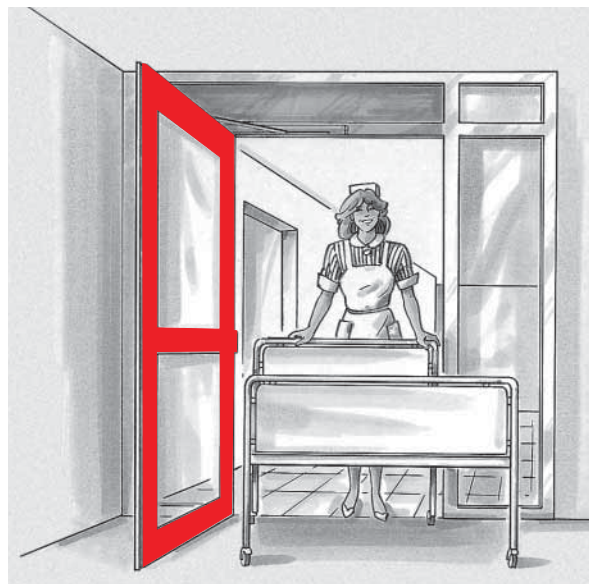
The backcheck feature ensures the safe deceleration and restraint of a door which has been flung open or caught by a gust of wind. This effectively reduces the danger of the door and adjacent wall being damaged.



- 3 Adjustable backcheck

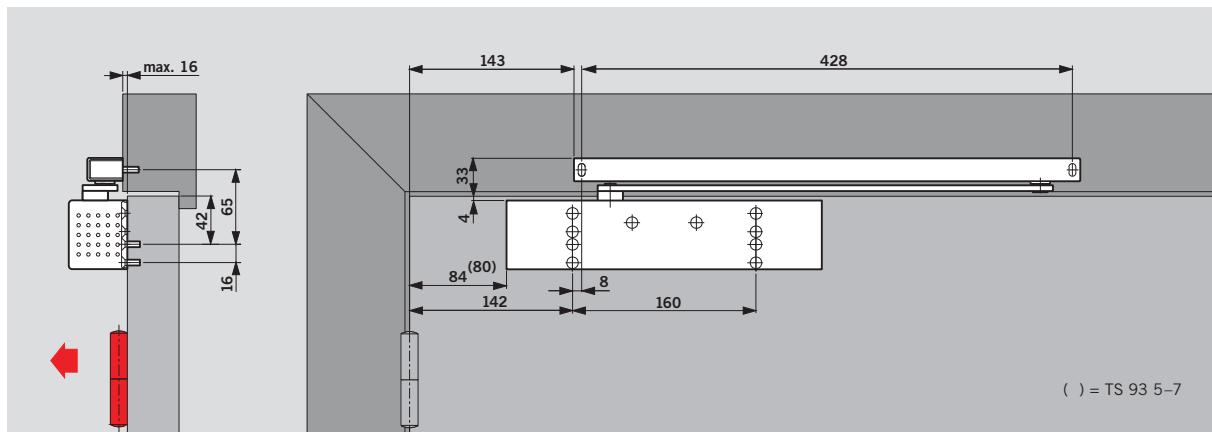
**Delayed action**

The delayed action feature retards the closing cycle between 120° and 70° (approximate values for pull-side door leaf fixing). The extra time allowed for passage through the doorway can be essential for people with luggage or bulky items: mothers with prams, personnel with tea trolleys, post trolleys, hospital beds, etc.; and also for disabled people.



- 4 Adjustable delayed action

## Pull-side door leaf fixing



Door leaf fixing (standard arrangement) of the DORMA TS 93 B on the pull side. Structural conditions permitting, an opening angle of  $180^\circ$  is possible with this fixing method. In most cases, a wall recess may have to be provided for the door closer.

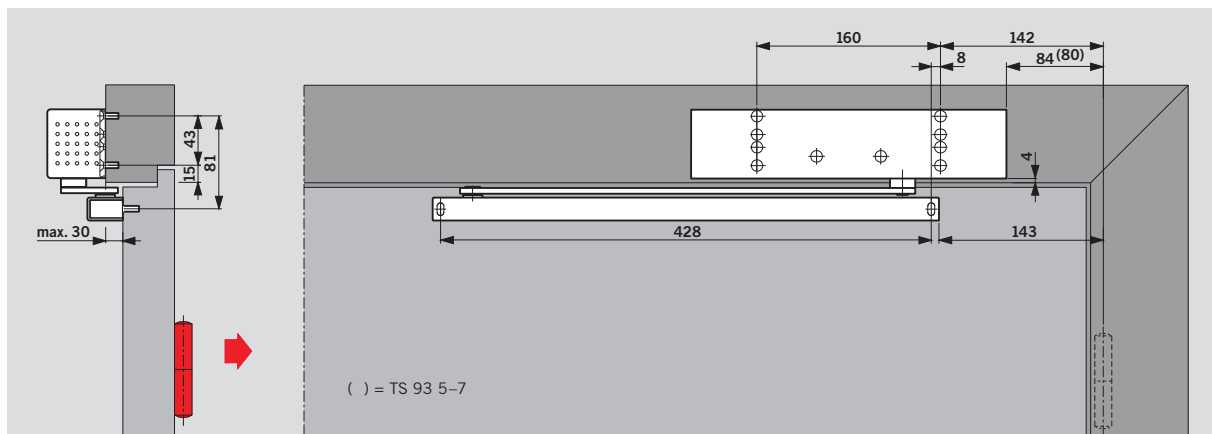
Example: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors.

### F Approval certification

The DORMA TS 93 B is CERTIFIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240.



## Push-side transom fixing



Transom fixing (overhead frame fixing) of the DORMA TS 93 B on the push side. Backcheck and delayed action non-operative with this fixing arrangement. The door opening angle is limited to approx.  $120^\circ$  to  $145^\circ$ , depending on the structural conditions. In order to prevent damage to the wall and door, a door stop should be installed to limit the maximum angle of door opening.

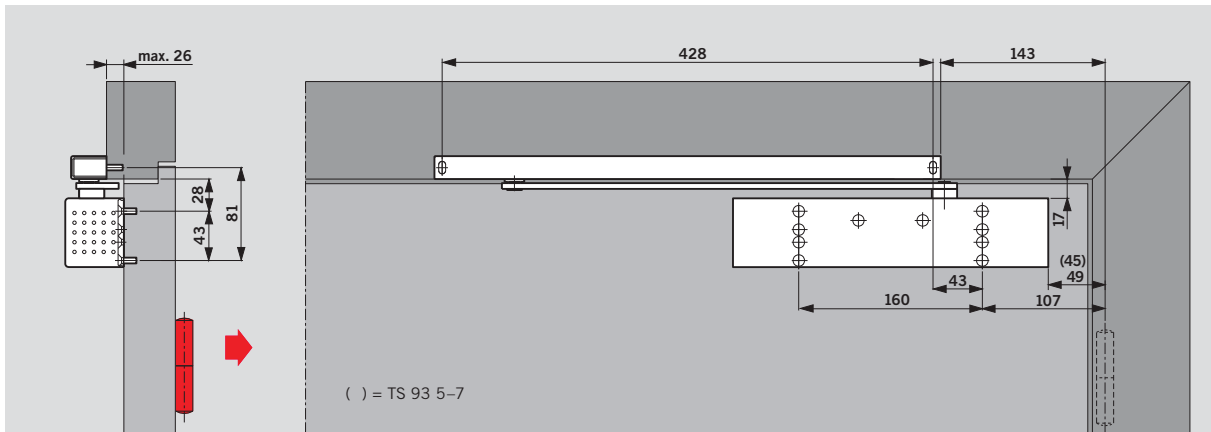
Example: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors.

### F Approval certification

The DORMA TS 93 B is CERTIFIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240.



## Push-side door leaf fixing



Door leaf fixing (standard installation) of the DORMA TS 93 G on the push side. The door opening angle is limited to approx. 120° to 145°, depending on the structural conditions. In order to prevent damage to the wall and door, a door stop should be installed to limit the maximum angle of door opening.

**A door stop must be installed for fire and smoke doors.**

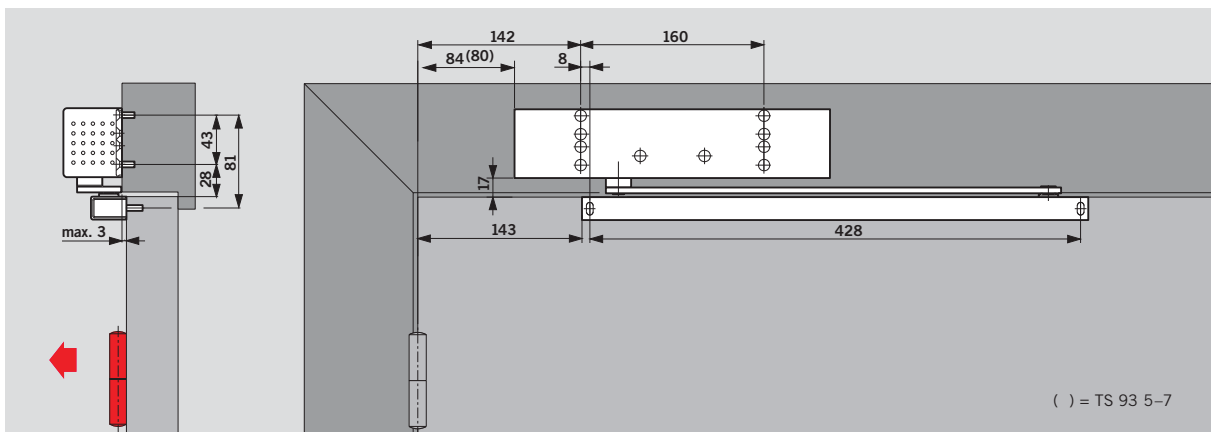
Example: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors.

### F Approval certification

The DORMA TS 93 G is CERTIFIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240.



## Pull-side transom fixing



Transom fixing (overhead frame fixing) of the DORMA TS 93 G on the pull side. Structural conditions permitting, an opening angle of 180° is possible with this fixing method.

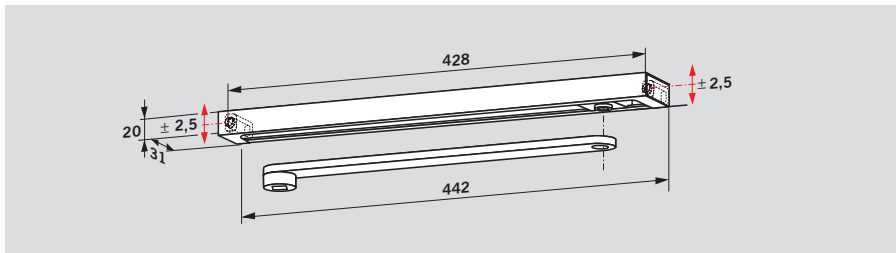
Example: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors

### F Approval certification

The DORMA TS 93 G is CERTIFIRE approved (Certificate No. CF 119) for door types ITT 120, MM/IMM 240.



## Standard model



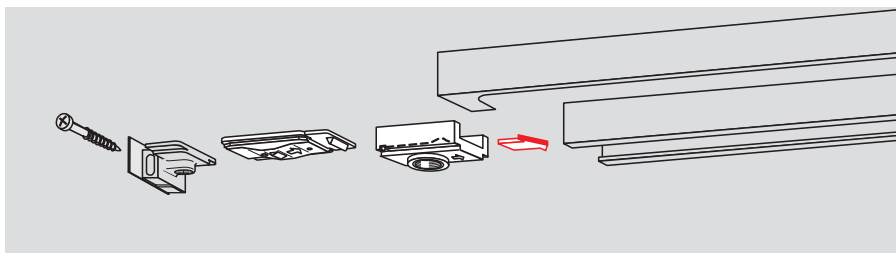
The **DORMA G-N** slide channel assembly incorporates the slide arm, slide channel, slide block, fixing adapters, screws and end caps. The DORMA G-N slide channel assembly is non-handed and can be combined with all door closer models.

Thanks to oblong holes in the fixing adapters, the slide channel can be effectively adjusted to variations in the drill hole pattern while keeping the gap between door closer body and slide channel aligned and parallel.

### F Approval certification

The DORMA G-N has been successfully type-tested to EN 1154 in conjunction with the DORMA TS 93. Certificates are available on request.

## Hold-open unit

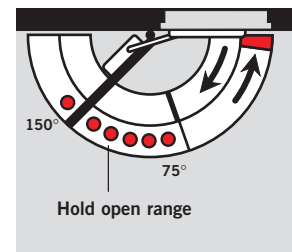


The **DORMA RF** hold-open unit enables doors to be securely held without any fall-back at precisely the required position up to an opening angle of approx. 150°. The hold-open function can be easily switched on and off by the user, and

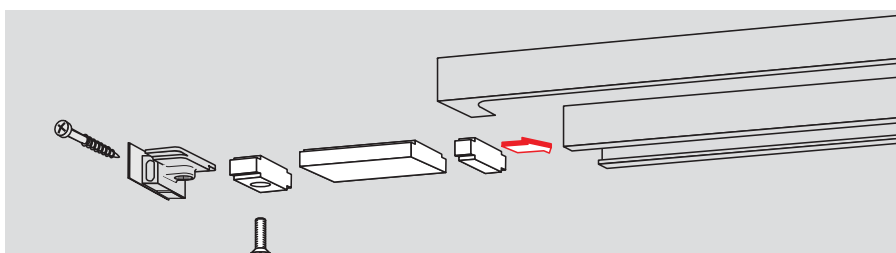
the release force can be adjusted to the door type concerned. The DORMA RF mechanism is non-handed and has been specifically designed for retrofitting to the G-N type standard slide channel.

The suitability of the hold-open unit may be limited where the closer unit is fixed to the door leaf on the push side, in combination with outward-opening doors, and also in the case of large, heavy doors.

**Not for fire and smoke doors.**



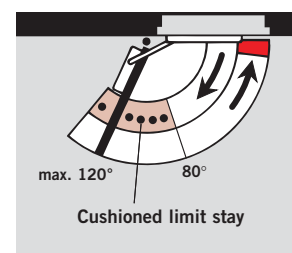
## Cushioned limit stay



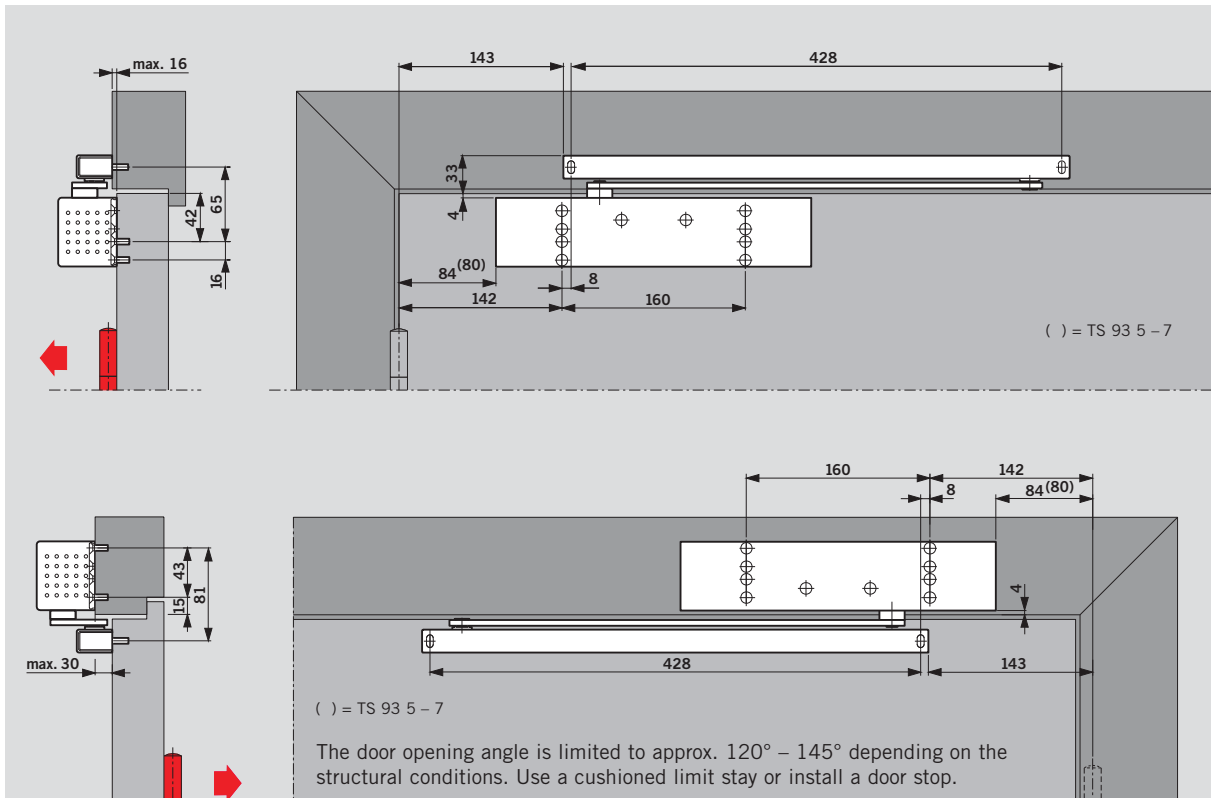
Accessories for the DORMA G-N, RF slide channel:  
**Cushioned limit stay** for retrofitting to the slide channel. Adjustable between 80° and **max. 120°**.

The cushioned limit stay prevents the door from hitting the adjacent wall when opened normally.

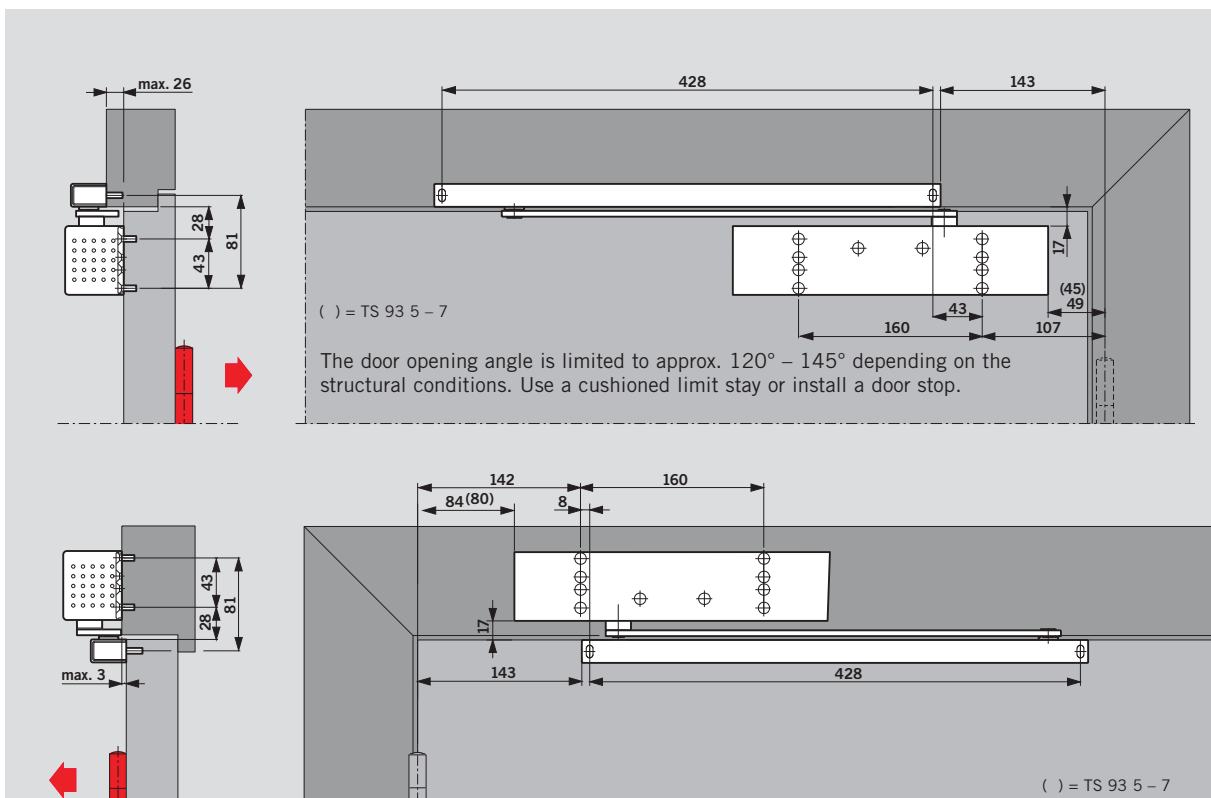
**The cushioned limit stay is not a heavy-duty protective device and in many applications cannot substitute for a door stop.**





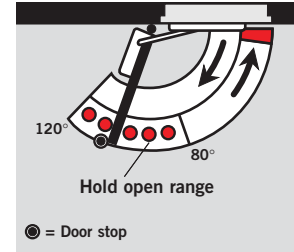
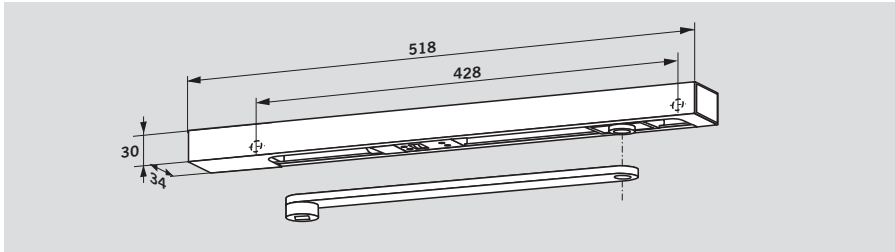


DORMA **TS 93 B** door closer with DORMA G-N slide channel assembly, door leaf fixing on the pull side and transom fixing on the push side.  
 Examples: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors.



DORMA **TS 93 G** door closer with DORMA G-N slide channel assembly, door leaf fixing on the push side and transom fixing on the pull side.  
 Examples: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors.

## Electro-mechanical hold-open



The **DORMA G-EMF** slide channel assembly enables the door to be held open securely at a preselected position without fall-back. The hold-open point can be adjusted within an opening angle of approx. 80° and 120°.

**Note**

The active leaf can be opened up to the maximum selected hold-open point (door stop to be positioned accordingly).

In the event of an alarm or a fault in the power supply, the hold-open is released and the door is closed by the door closer. The release is triggered by a signal from external smoke detectors (e.g. DORMA RMZ or DORMA RM).

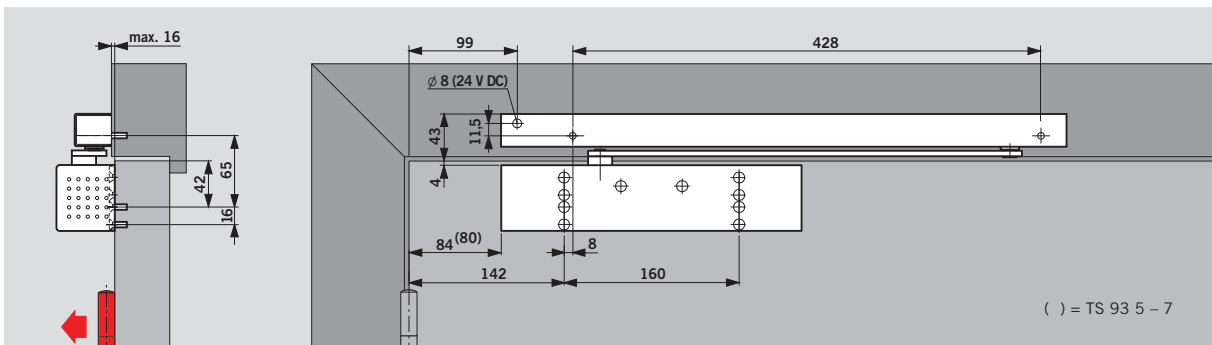
The release force for the hold-open mechanism can be adjusted without tools and is rated to ensure that

the door can also be easily released manually. The DORMA G-EMF slide channel assembly comprises the slide arm, slide channel, slide block, electro-mechanical hold-open unit, cover, fixing screws and end caps. The DORMA G-EMF is transom-fixed and non-handed.

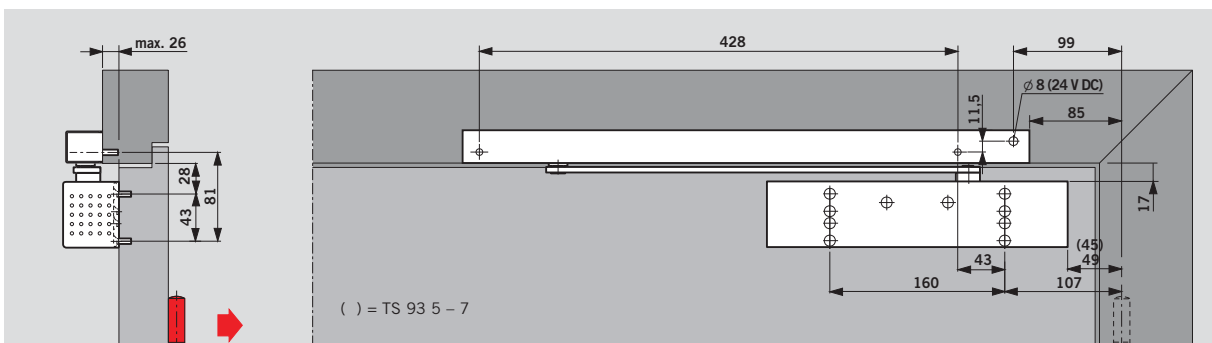
In the case of particularly large and heavy doors (over 1250 mm), or doors in which the hold-open point required exceeds 120°, we recommend that DORMA EM hold-open magnets in conjunction with the DORMA RMZ central smoke detector be employed instead of the electro-mechanical hold-open unit.

**Technical data**

Operating voltage	24 vDC, ± 15 %
Power input	1.4 W
Rated for continuous duty	(100 %)
Release force	adjustable



DORMA **TS 93 B** closer with DORMA G-EMF slide channel assembly, pull-side fixing  
 Example: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors.



DORMA **TS 93 G** closer with DORMA G-EMF slide channel assembly, push-side fixing  
 Example: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors.

### F Approval certification

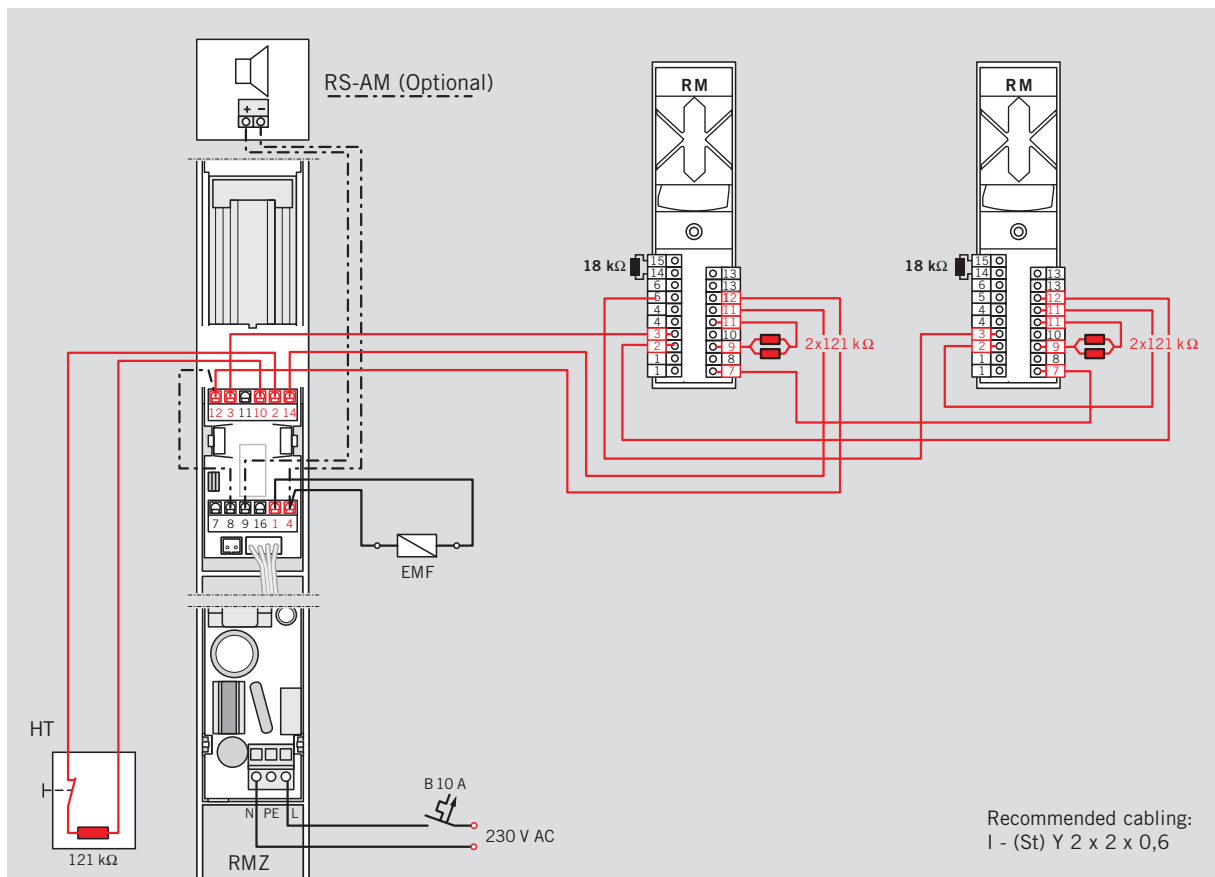
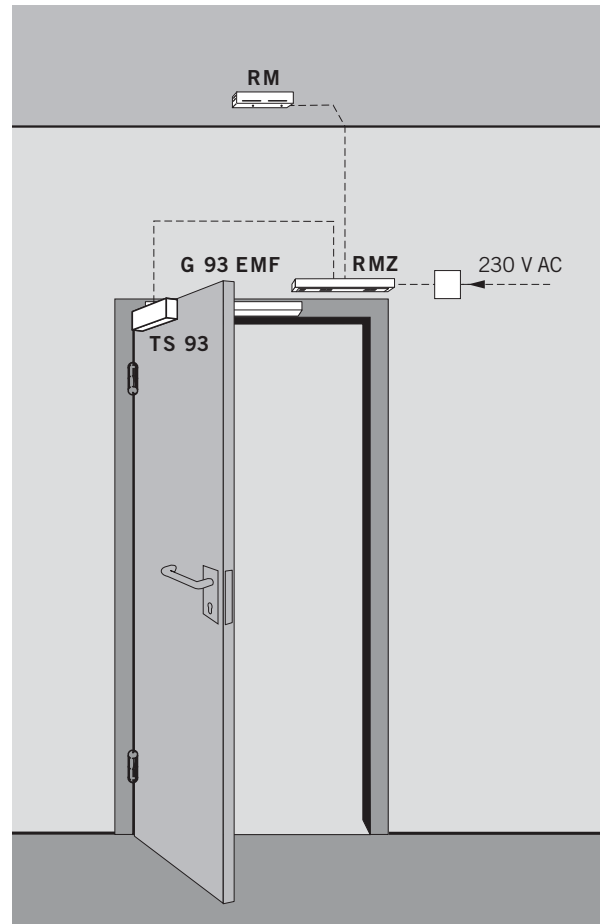
The DORMA TS 93 EMF has been successfully type-tested to EN 1155, Electrically Powered Hold-Open Devices. Certificates are available on request.

### Regulations/Information

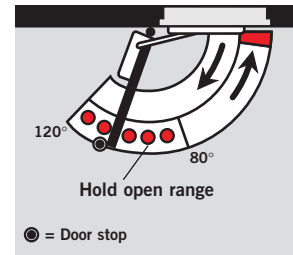
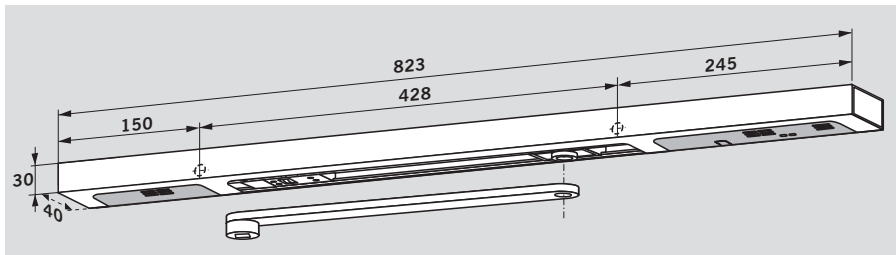
The use of hold-open devices may be subject to certain conditions – see page 27.

### Example application

Hold-open system on a fire and smoke door, comprising: DORMA TS 93 B door closer, DORMA G-EMF slide channel assembly, DORMA RMZ (smoke sensor, release switching unit and stabilised power pack for 24 vDC) as frame-mounted smoke detector, plus one DORMA RM smoke detector on both sides of the door. (See also page 22.)



## Electro-mechanical hold-open and integral smoke detector



The **DORMA G-EMR** slide channel assembly enables fire and smoke doors to be held open securely at precisely the angle required, and monitored and controlled completely independently of other systems. The hold-open point can be adjusted to opening angles between approx. 80° and 120°.

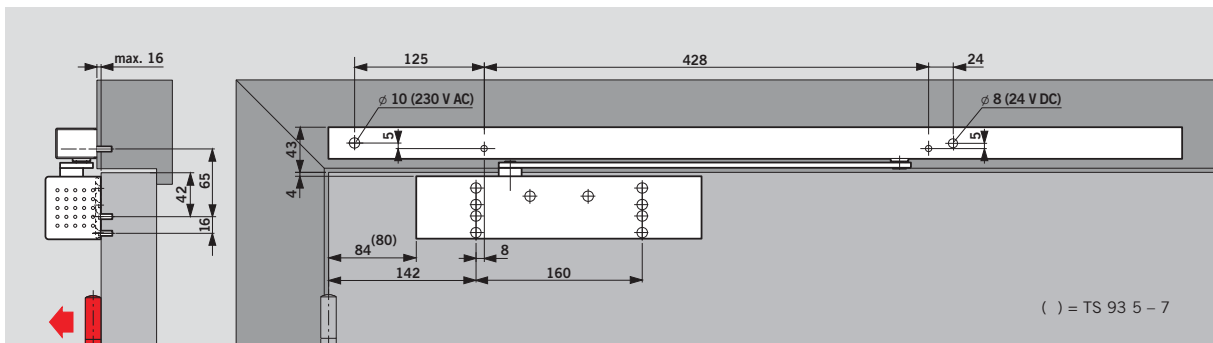
**Note**  
The active leaf can be opened up to the maximum selected hold-open point (door stop to be positioned accordingly). In the event of an alarm or a fault in the power supply, the hold-open is released and the door is closed by the door closer. The release force for the hold-open mechanism can

be adjusted without tools and is rated to ensure that the door can also be easily released manually. The **DORMA G-EMR** slide channel assembly comprises the arm, slide channel, slide block, electro-mechanical hold-open unit, smoke detector, power pack, cover, fixings and end caps. It is non-handed, enabling use with both RH/ISO 5 and LH/ISO 6 doors. A floating (volt-free) alarm contact and connections for further detectors and external manual release devices are provided. The G-SR-EMR DCW slide channel assembly

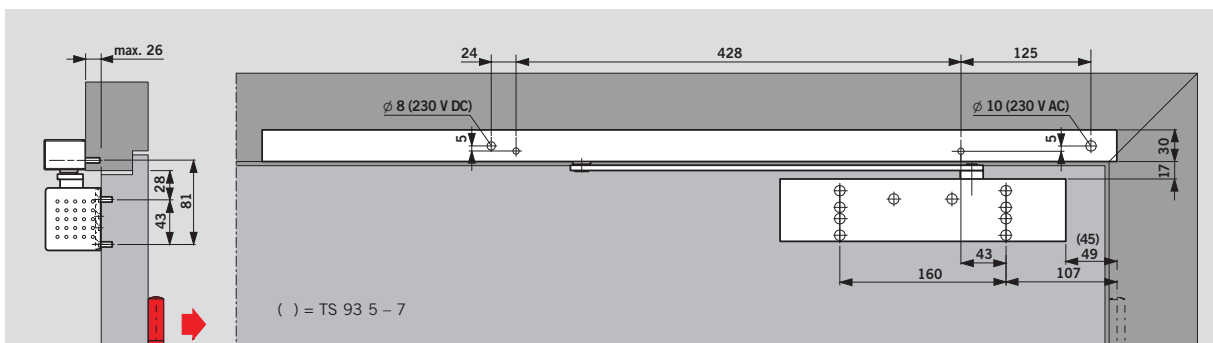
is also available without a power pack for integration in building management and control systems via a DCW bus and the DORMA TMS door management system. In the case of particularly large and heavy doors (over 1250 mm), or doors in which the hold-open point required exceeds 120°, we recommend that DORMA EM hold-open magnets be employed instead of the electro-mechanical hold-open unit, in conjunction with the DORMA RMZ-K/S frame-mounted smoke detector.

### Technical data

Power supply	230 vAC, ± 10 %
Operating voltage (internal)	24 vDC
Max. output rating	4.4 W
Rated for continuous duty	100 %
Release torque/force	adjustable



DORMA **TS 93 B** closer with DORMA G-EMR slide channel assembly, pull-side fixing  
Example: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors.



DORMA **TS 93 G** door closer with DORMA G-EMR slide channel assembly, push-side fixing  
Example: Anticlockwise-closing (ISO 6) door; mirrored arrangements apply to clockwise-closing (ISO 5) doors.

### F Approval certification

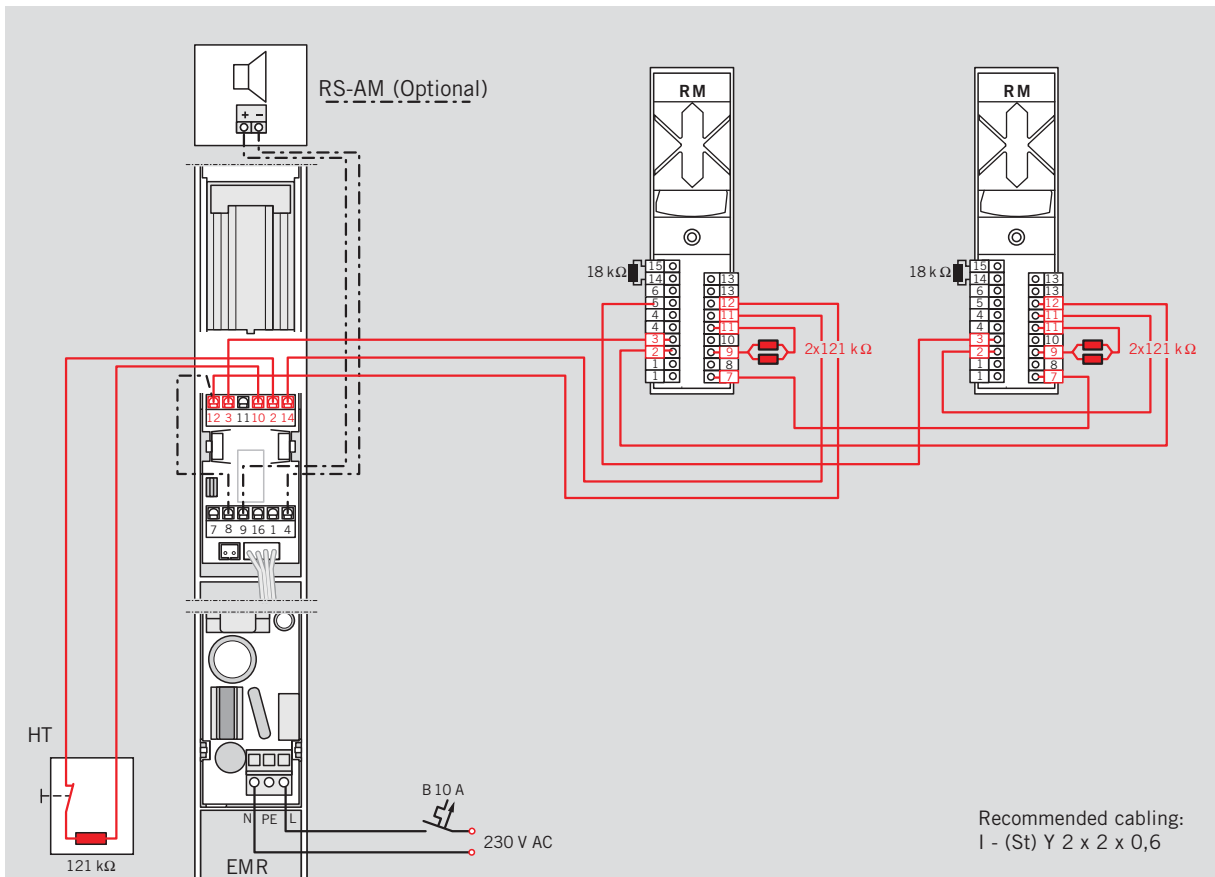
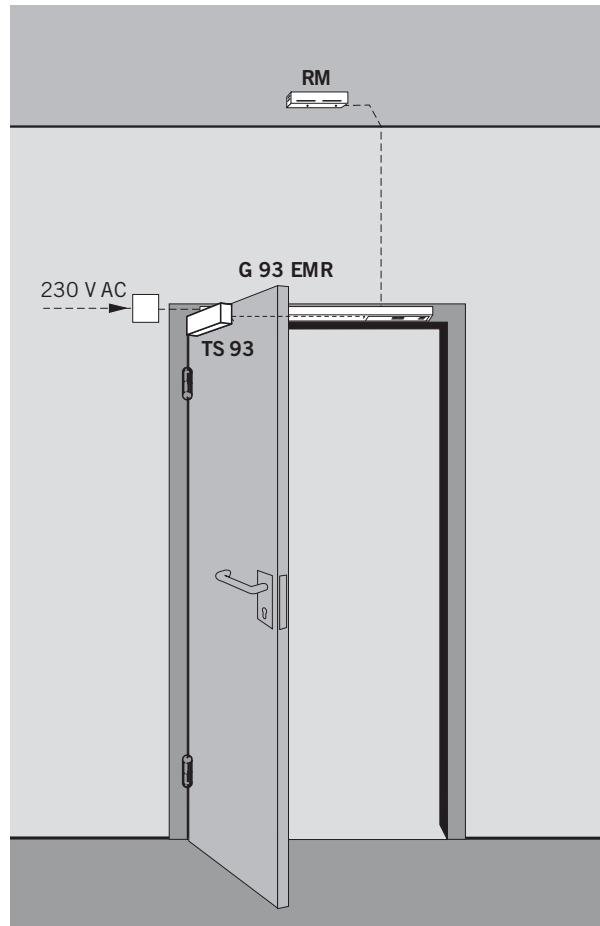
The DORMA TS 93 EMR has been successfully type-tested to EN 1155, Electrically Powered Hold-Open Devices. Certificates are available on request.

### Regulations/Information

The use of hold-open devices may be subject to certain conditions – see page 27.

### Example application

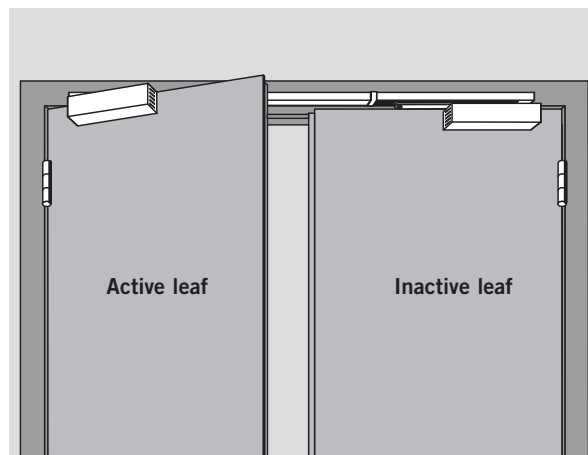
Hold-open system on a fire and smoke door, comprising: DORMA TS 93 B door closer, DORMA G-EMR slide channel assembly, plus one DORMA RM smoke detector on both sides of the door. (See also page 22.)



## Standard door co-ordinator (G-SR)

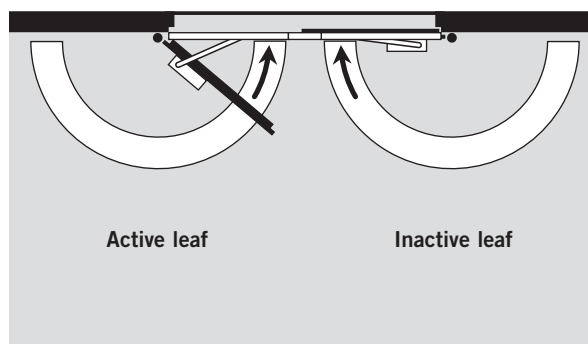
The DORMA G-SR slide channel with integral door co-ordinator featuring a push rod clamping system for **double doors**, ensures that the active leaf always closes after the inactive leaf. As this system operates independently of the door closer hydraulics, it offers maximum safety and reliabi-

lity (doors prevented from “creeping closed”). An overload release protects both the door co-ordinator and the door set from damage. The DORMA G-SR door co-ordinator is non-handed and suitable for combination with DORMA TS 93 B door closers.



### F Approval certification

The DORMA TS 93 G-SR has been successfully type-tested to EN 1158, Door Co-ordinator Devices. Certificates are available on request.



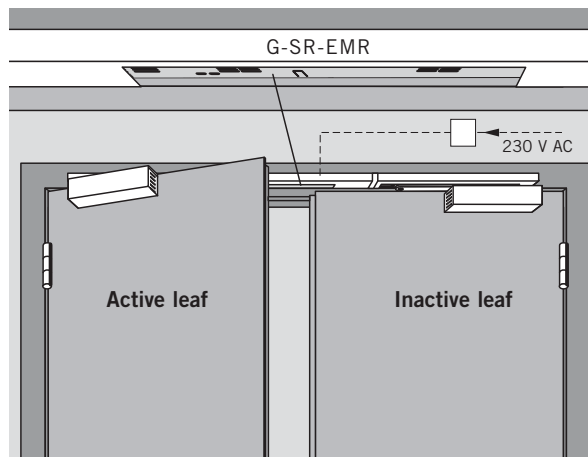
## Door co-ordinator with electro-mechanical hold-open (G-SR-EMF) Door co-ordinator with integral smoke detector (G-SR-EMR)

These door co-ordinators not only ensure the correct closing sequence of double doors, but also allow the door leaves to be individually held open. In the event of an alarm or power failure, the hold-open is released and the door is closed by the door closer.

The release action is triggered by a signal from the smoke detector integrated in the G-SR-EMR door co-ordinator.

The G-SR-EMR DCW door co-ordinator model is also available without a power pack for integration in building management and control systems via a DCW bus and the DORMA TMS door management system.

The pull-off force for the hold-open mechanism can be adjusted without tools and is rated to ensure that the door can also be easily released manually. DORMA G-SR-EMF and G-SR-EMR door co-ordinators are non-handed and suitable for combination with DORMA TS 93 B door closers. In the case of doors in which the hold-open point required exceeds 130°, we recommend that DORMA EM hold-open magnets be applied instead of the electro-mechanical hold-open unit.



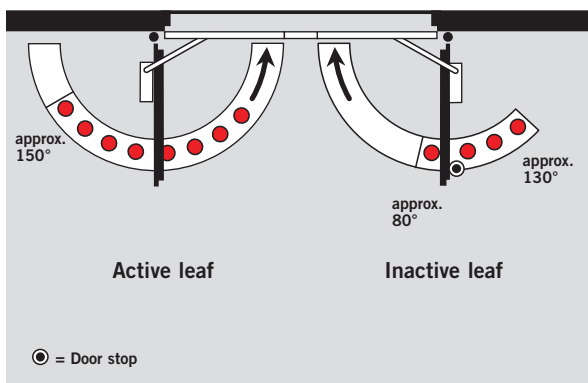
### Regulations/Information

The use of hold-open devices may be subject to certain conditions – see page 27.

### DORMA G-SR-EMF 1

This door co-ordinator contains just one hold-open mechanism, located in the inactive leaf slide channel, for holding open both door leaves. The single-point hold-open position is adjustable between approx. 80° and 130°.

**Note** The active leaf can be opened up to the maximum selected hold-open point (door stop to be positioned accordingly). The active leaf can be held open by the door co-ordinator at any angle up to max. 150°.



### DORMA G-SR-EMR 1

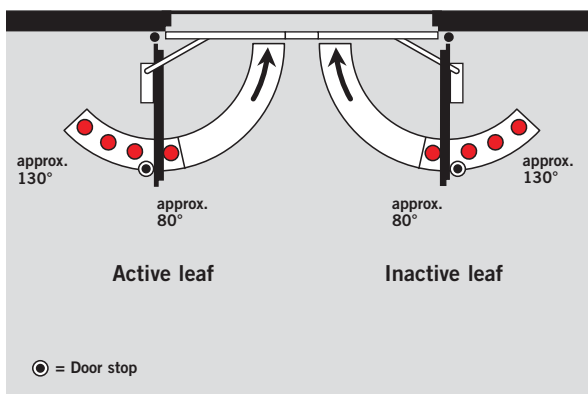
This door co-ordinator includes an integral smoke detector.

A floating (volt-free) alarm contact and connections for further detectors and external manual release devices are also provided. Technical data for smoke detectors: see page 22.

### DORMA G-SR-EMF 2

With this door co-ordinator, the active leaf can be held open independently of the inactive leaf. The hold-open points for each leaf lie between approx. 80° and 130°.

**Note** The active leaf can be opened up to the maximum selected hold-open point (door stop to be positioned accordingly).



### DORMA G-SR-EMR 2

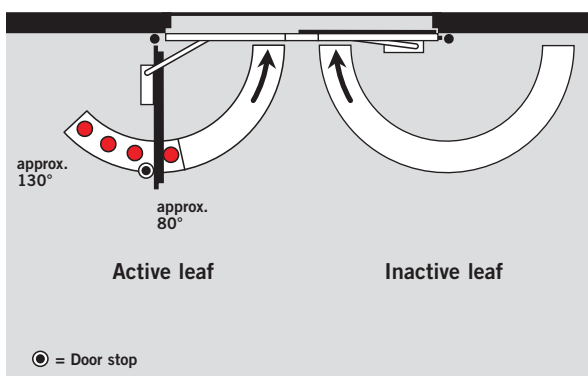
This door co-ordinator includes an integral smoke detector.

A floating (volt-free) alarm contact and connections for further detectors and external manual release devices are also provided. Technical data for smoke detectors: see page 22.

### DORMA G-SR-EMF 1G

This door co-ordinator enables the active leaf to be held open independently in special door sets involving, for example, fixed side screens, narrow inactive leaves ("penny farthing" doors), etc. The hold-open point lies between approx. 80° and 130°.

**Note** The active leaf can be opened up to the maximum selected hold-open point (door stop to be positioned accordingly).



### DORMA G-SR-EMR 1G

This door co-ordinator includes an integral smoke detector.

A floating (volt-free) alarm contact and connections for further detectors and external manual release devices are also provided. Technical data for smoke detectors: see page 22.

### F Approval certification

The DORMA TS 93 G-SR-EMF 1, EMF 2 and EMF 1G have been successfully type-tested to EN 1155, Electrically Powered Hold-Open Devices. Certificates are available on request.

### Technical data

Operating voltage	24 vDC ± 15 %
Power input	1.4 W (GSR EMF 2 = 2.8 W)
Rated for continuous duty	100 %
Release torque/force	adjustable

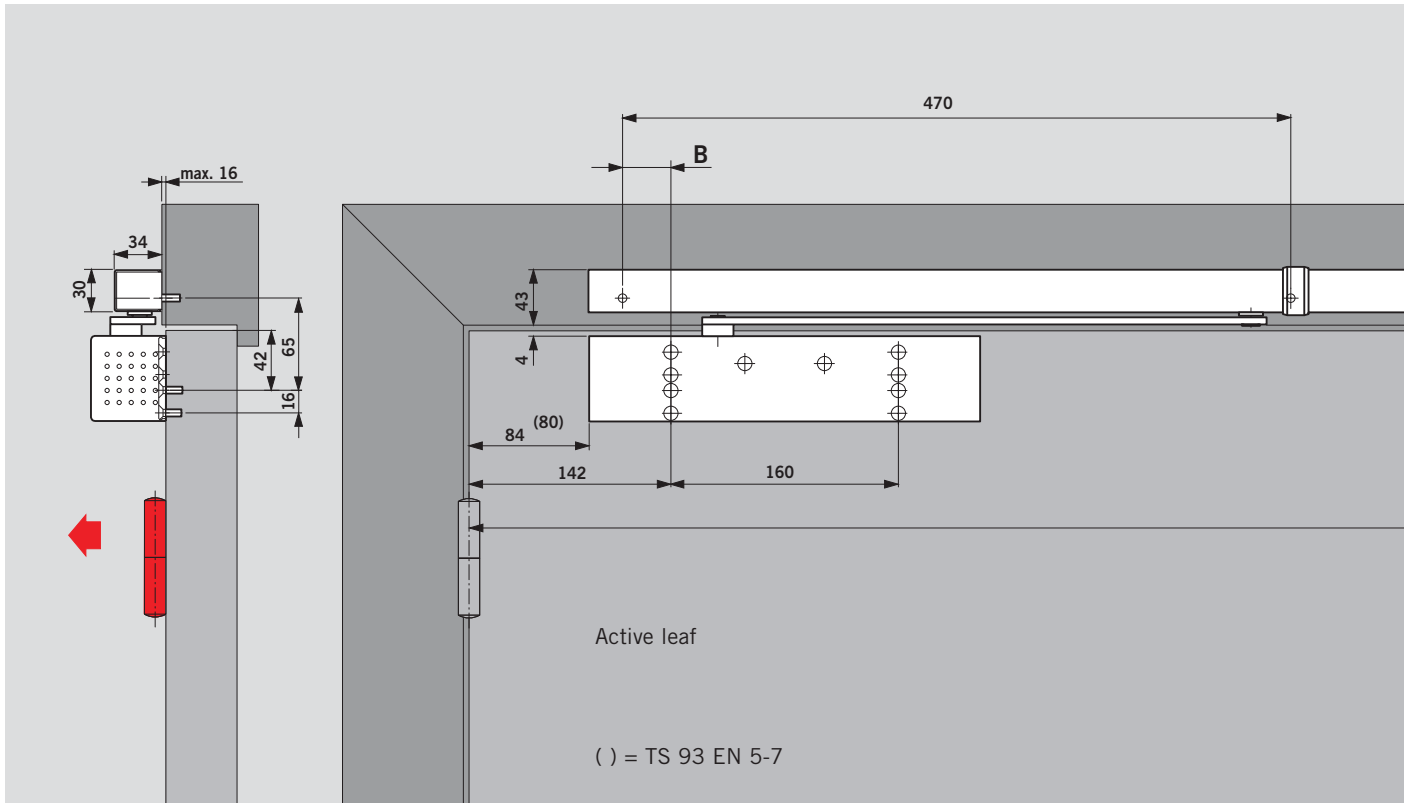
In the case of doors in which the hold-open point required exceeds 130°, we recommend that DORMA EM hold-open magnets be employed instead of the electro-mechanical hold-open unit.

### F Approval certification

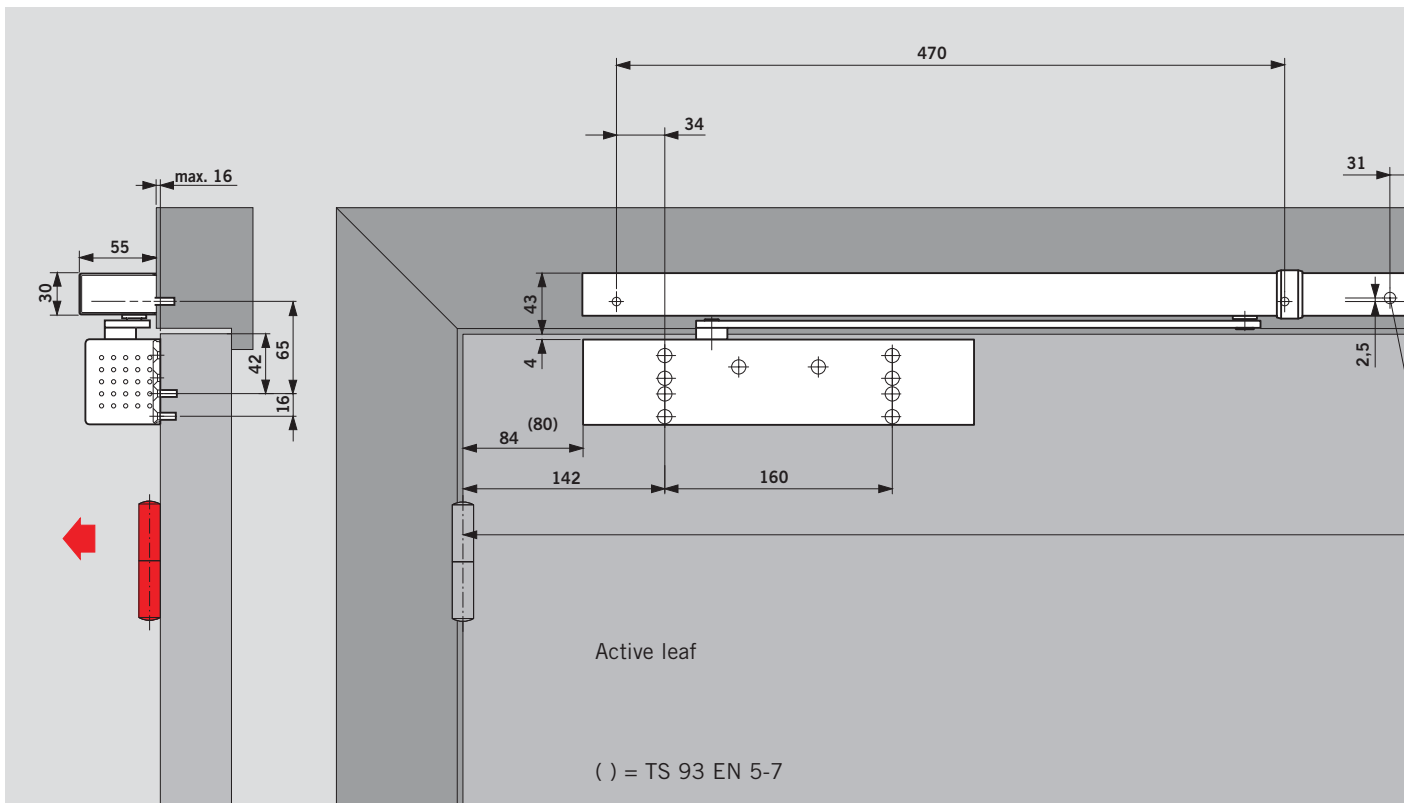
The DORMA TS 93 G-SR-EMR 1, EMR 2 and EMR 1G have been successfully type-tested to EN 1155, Electrically Powered Hold-Open Devices. Certificates are available on request.

### Standard door co-ordinator (G-SR)

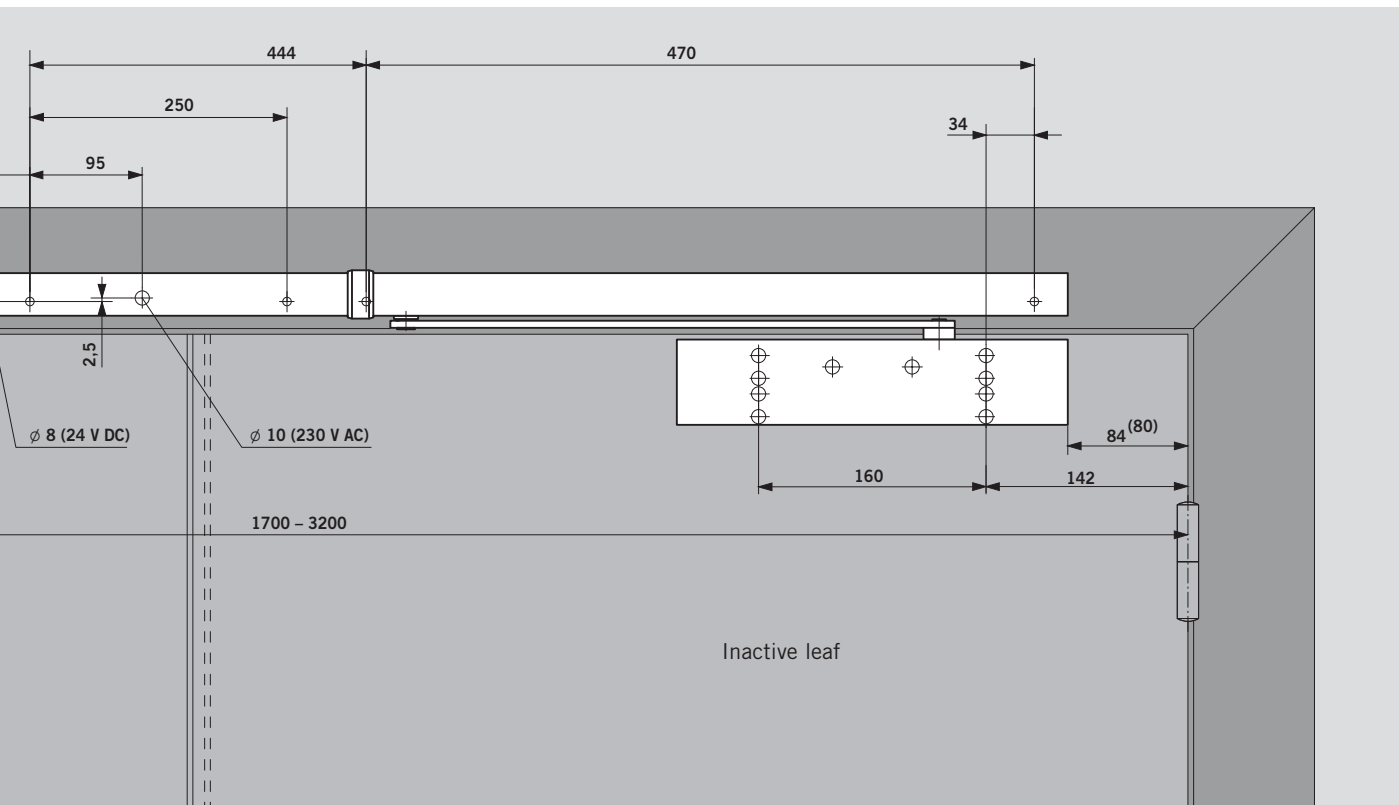
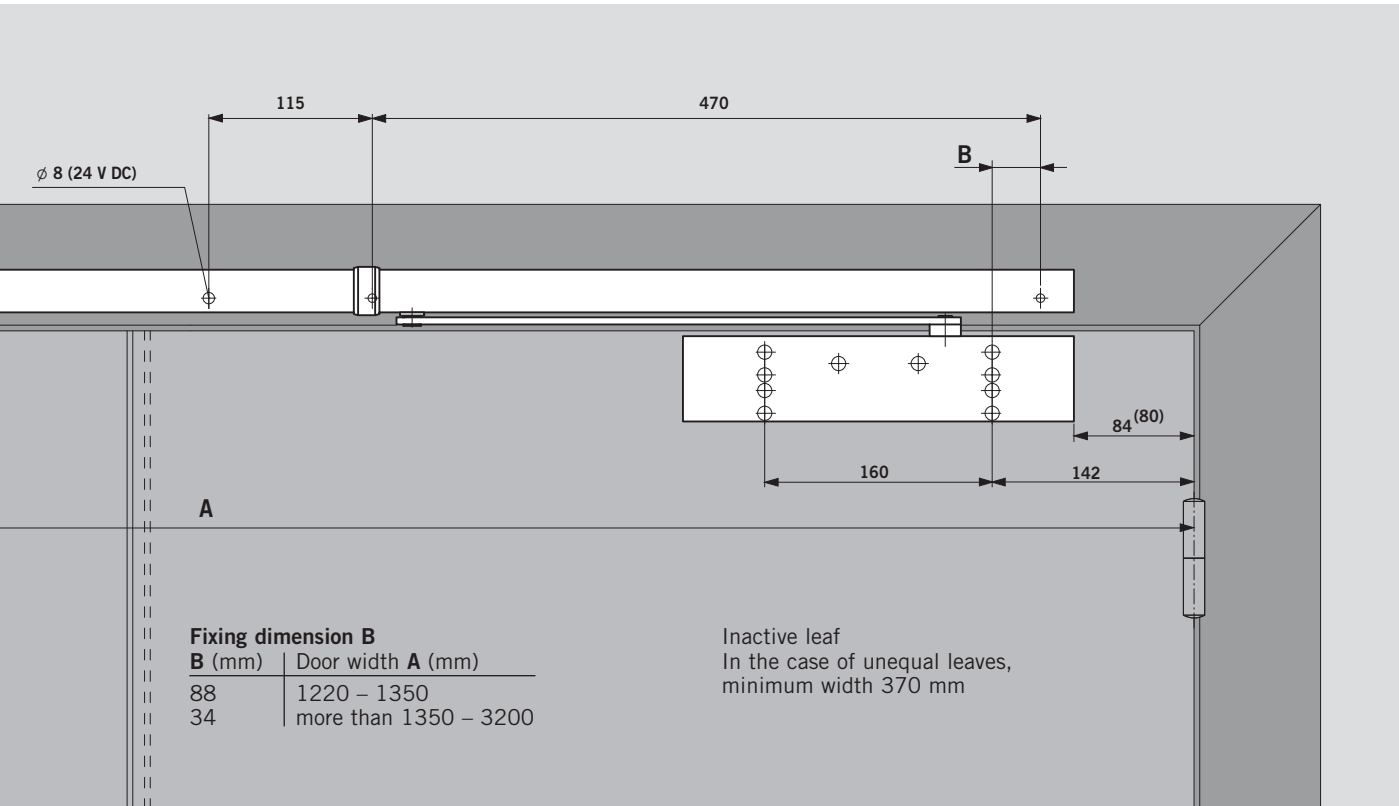
### Door co-ordinator with electro-mechanical hold-open (G-SR-EMF)



### Door co-ordinator with integral smoke detector (G-SR-EMR)







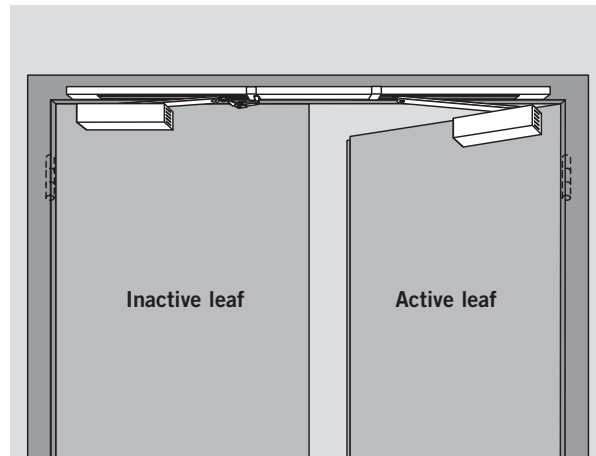
## Standard door co-ordinator (G-SR/BG)

The DORMA G-SR/BG push-side slide channel with integral door co-ordinator, featuring a push rod clamping system for double doors, ensures that the active leaf always closes after the inactive leaf. As this system operates independently of the door closer hydraulics, it offers maximum safety and reliability (doors prevented from “creeping closed”). An overload release protects both the door co-ordinator and the door set from damage.

The DORMA G-SR/BG door coordinator is non-handed and suitable for combination with DORMA TS 93 G door closers.

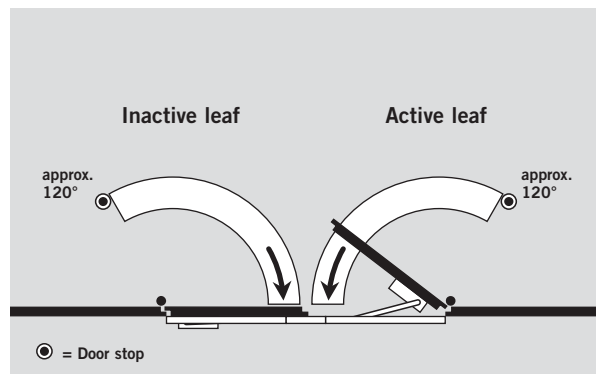
**Note:**

Max. opening angle 120° (door stop to be positioned accordingly).  
 Not suitable for emergency exit doors which are opened at the inactive leaf.



**F Approval certification**

The DORMA TS 93 G-SR/BG has been successfully type-tested to EN 1158, Door Co-ordinator Devices. Certificates are available on request.



## Door co-ordinator with electro-mechanical hold-open (G-SR-EMF/BG) Door co-ordinator with integral smoke detector (G-SR-EMR/BG)

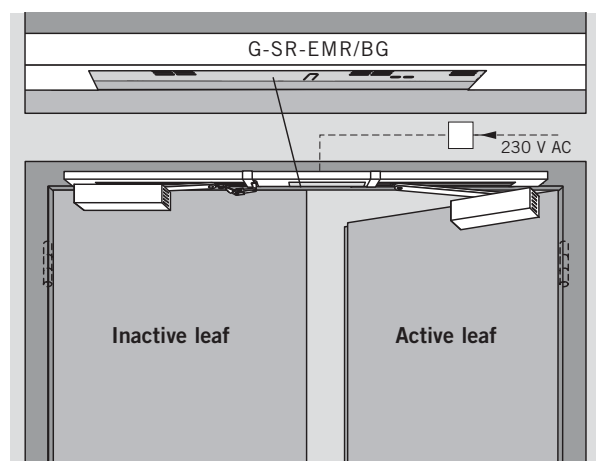
These push-side door co-ordinators not only ensure the correct closing sequence of double doors, but also allow the door leaves to be individually held open. In the event of an alarm or power failure, the hold-open is released and the door is closed by the door closer. The release is triggered by a signal from the smoke detector integrated in the G-SR-EMR/BG door co-ordinator.

The G-SR-EMR DCW/BG door co-ordinator model is also available without a power pack for integration in building management and control systems via a DCW bus and the DORMA TMS door management system.

The pull-off force for the hold-open mechanism can be adjusted without tools and is rated to ensure that the door can also be easily released manually.

The DORMA G-SR-EMF/BG and G-SR-EMR/BG door co-ordinators are non-handed and suitable for combination with DORMA TS 93 G door closers.

Not suitable for emergency exit doors which are opened at the inactive leaf.



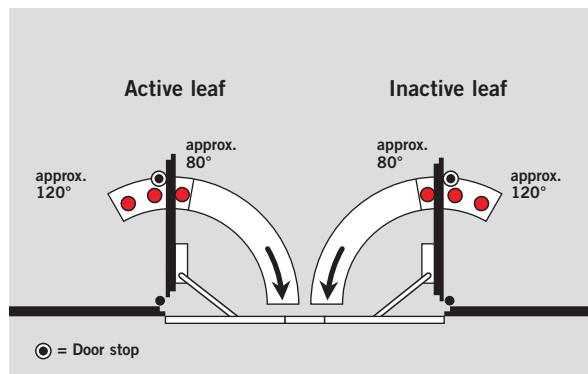
**Regulations/Information**

The use of hold-open devices may be subject to certain conditions – see page 27.

### DORMA G-SR-EMF 2/BG

With this door co-ordinator, the active leaf can be held open independently of the inactive leaf. The hold-open points for each leaf lie between approx. 80° and 120°.

**Note** The active leaf can be opened up to the maximum selected hold-open point (door stop to be positioned accordingly).



### DORMA G-SR-EMR 2/BG

This push-side door co-ordinator includes an integral smoke detector. A floating (volt-free) alarm contact and connections for further detectors and external manual release devices are also provided.

Technical data for smoke detectors: see page 22.

### F Approval certification

The DORMA TS 93 G-SR-EMF 2/BG have been successfully type-tested to EN 1155, Electrically Powered Hold-Open Devices. Certificates are available on request.

### Technical data

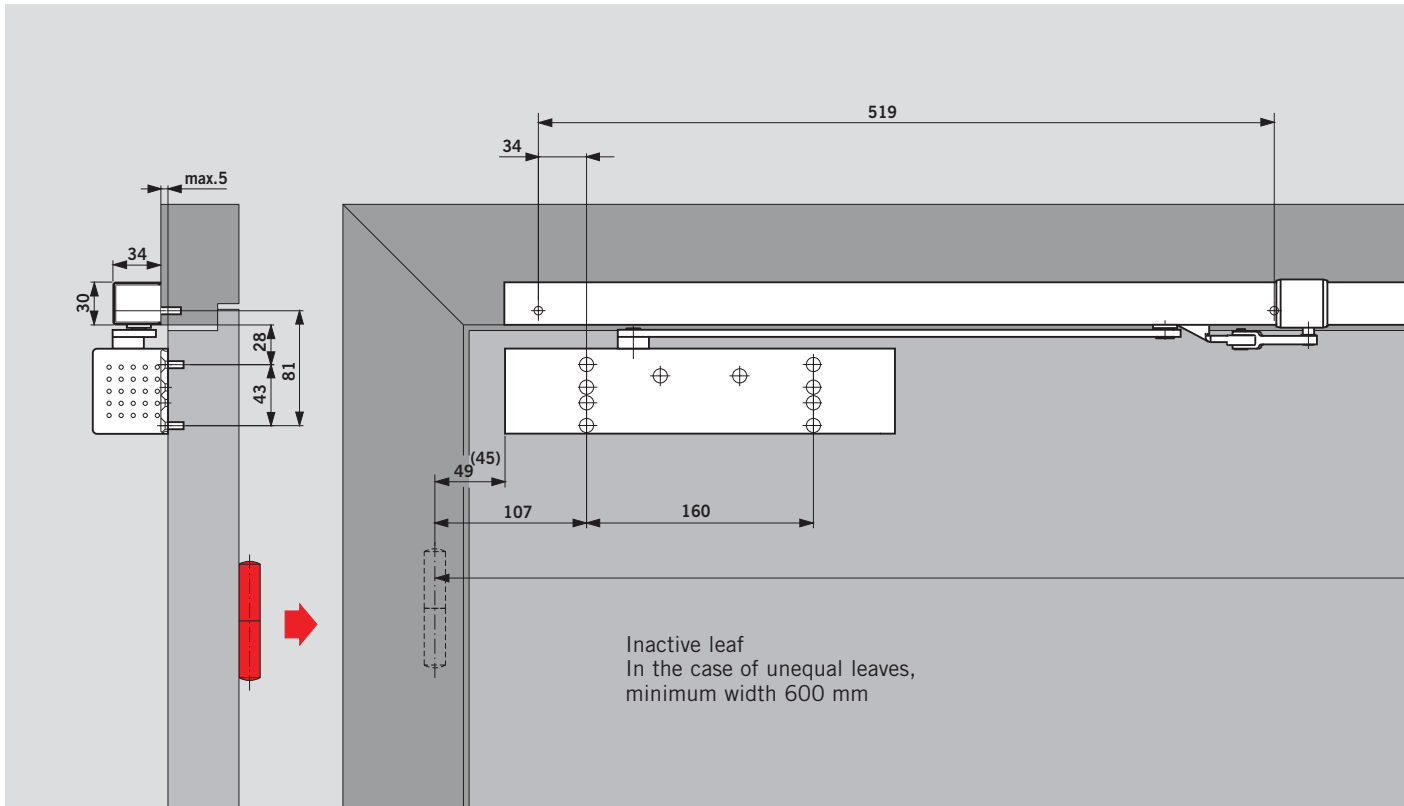
Operating voltage	24 vDC ± 15 %
Power input	1.4 W (GSR EMF 2/BG = 2.8 W)
Rated for continuous duty	100 %
Release torque/force	adjustable

### F Approval certification

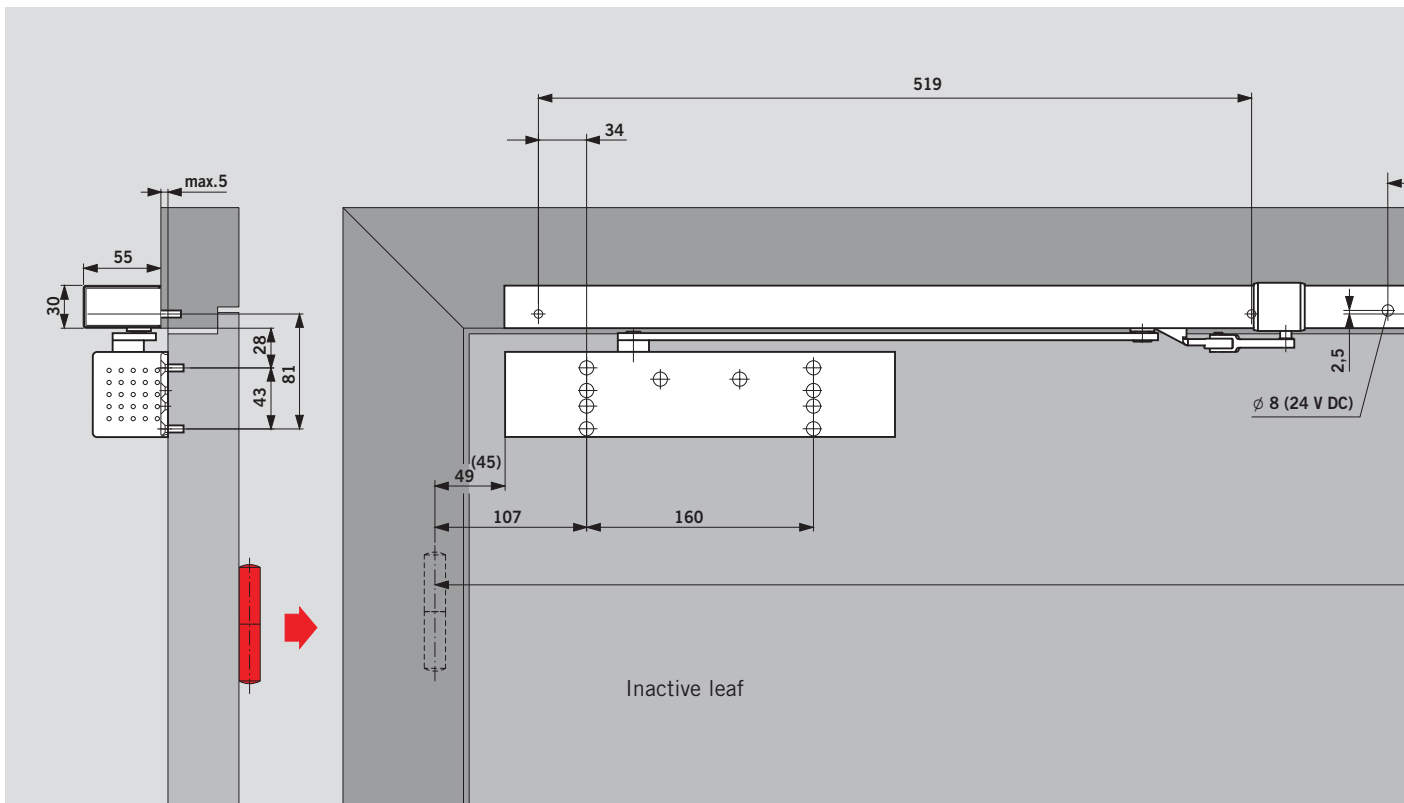
The DORMA TS 93 G-SR-EMR 2/BG has been approved by the German Institute for Building Technology, Berlin, for use as a hold-open unit. Acceptance inspection of the system is mandatory.

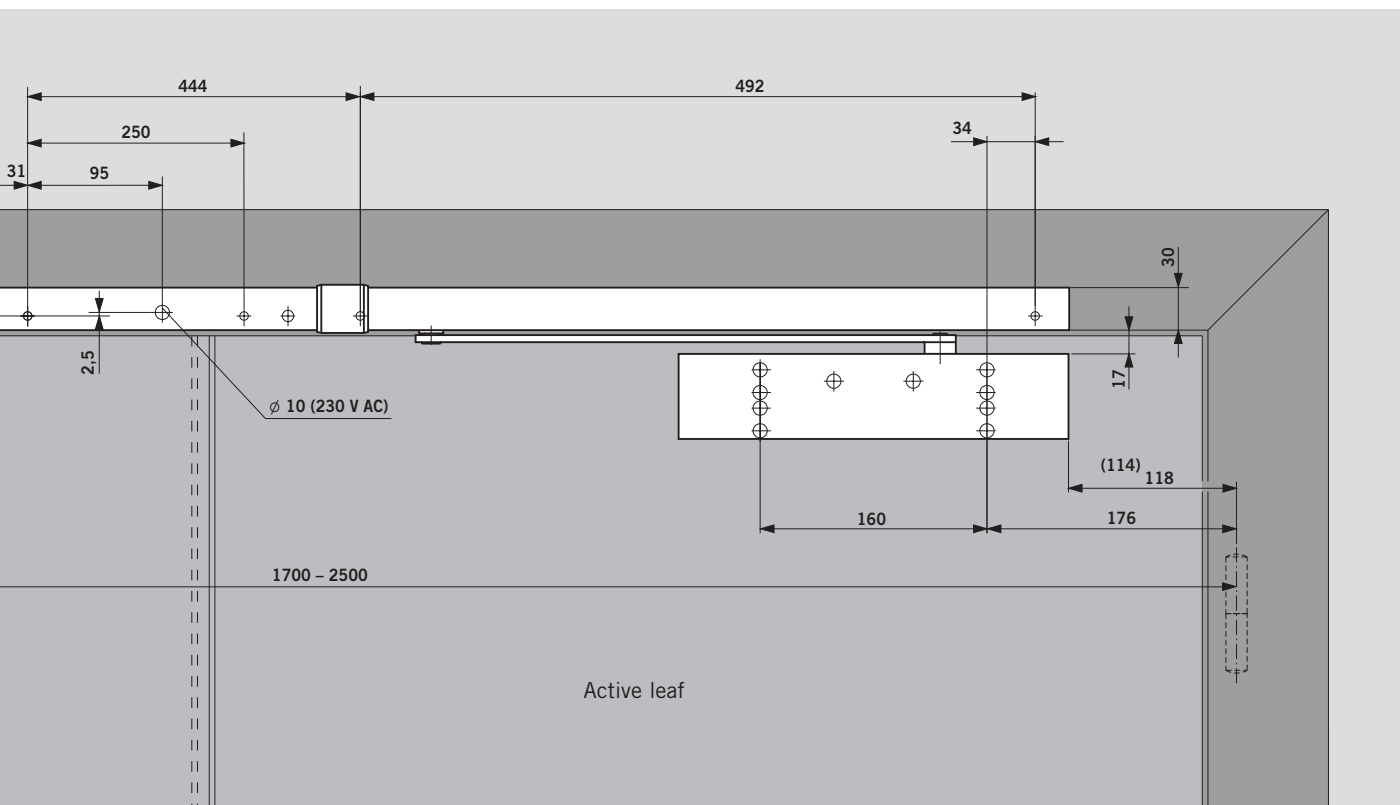
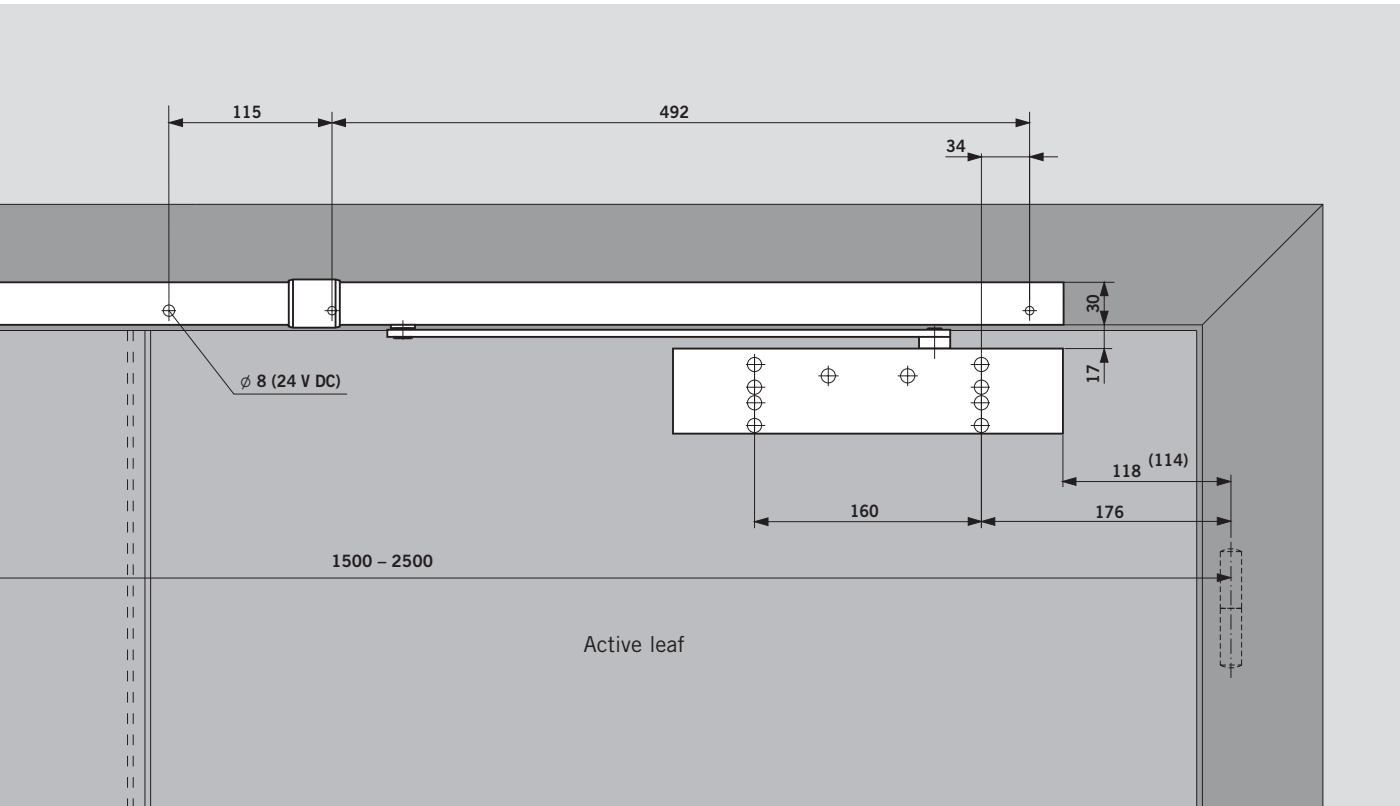
**Standard door co-ordinator (G-SR/BG)**

**Door co-ordinator with electro-mechanical hold-open (G-SR-EMF/BG)**



**Door co-ordinator with integral smoke detector (G-SR-EMR/BG)**





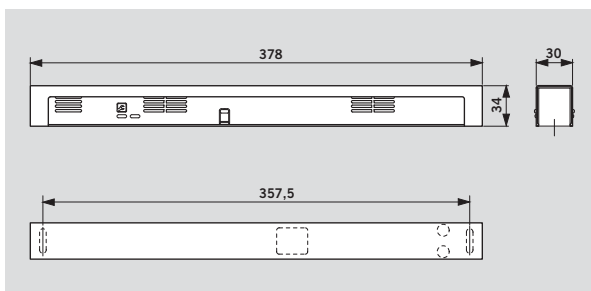
The DORMA RMZ and DORMA RM smoke detectors provide the ideal complement to the successful, service-proven DORMA TS 93 range in preventive fire protection environments. They are designed in accordance with the latest codes

issued by the German Institute for Building Technology and ensure perfect interaction between all the devices employed for holding open fire and smoke check doors – whatever the situation.

### DORMA RMZ

The DORMA RMZ smoke detector provides a 24 V DC supply for all the hold-open devices connected to it. In the event of an alarm or power failure, it de-energises the devices (release function). It has an automatic reset, which can be switched to manual reset if required. A floating (volt-free) change-over contact and connections for further detectors

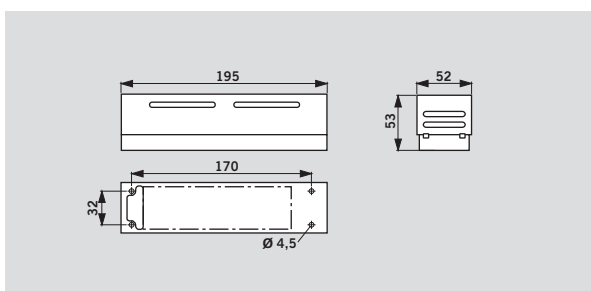
and external manual release devices are also provided. The smoke detector is available in the RMZ version with stabilised power pack or in the RMZ DCW version without a power pack for integration in building management and control systems via a DCW bus and the DORMA TMS door management system.



### DORMA RM

The DORMA RM smoke detector is designed as a smoke switch and actuates a floating (volt-free) change-over contact in the event of an alarm or power failure. It is also suitable as an add-on smoke detector for the

DORMA TS 93 EMR and RMZ. A floating (volt-free) change-over contact and connections for further detectors and external manual release devices are also provided.



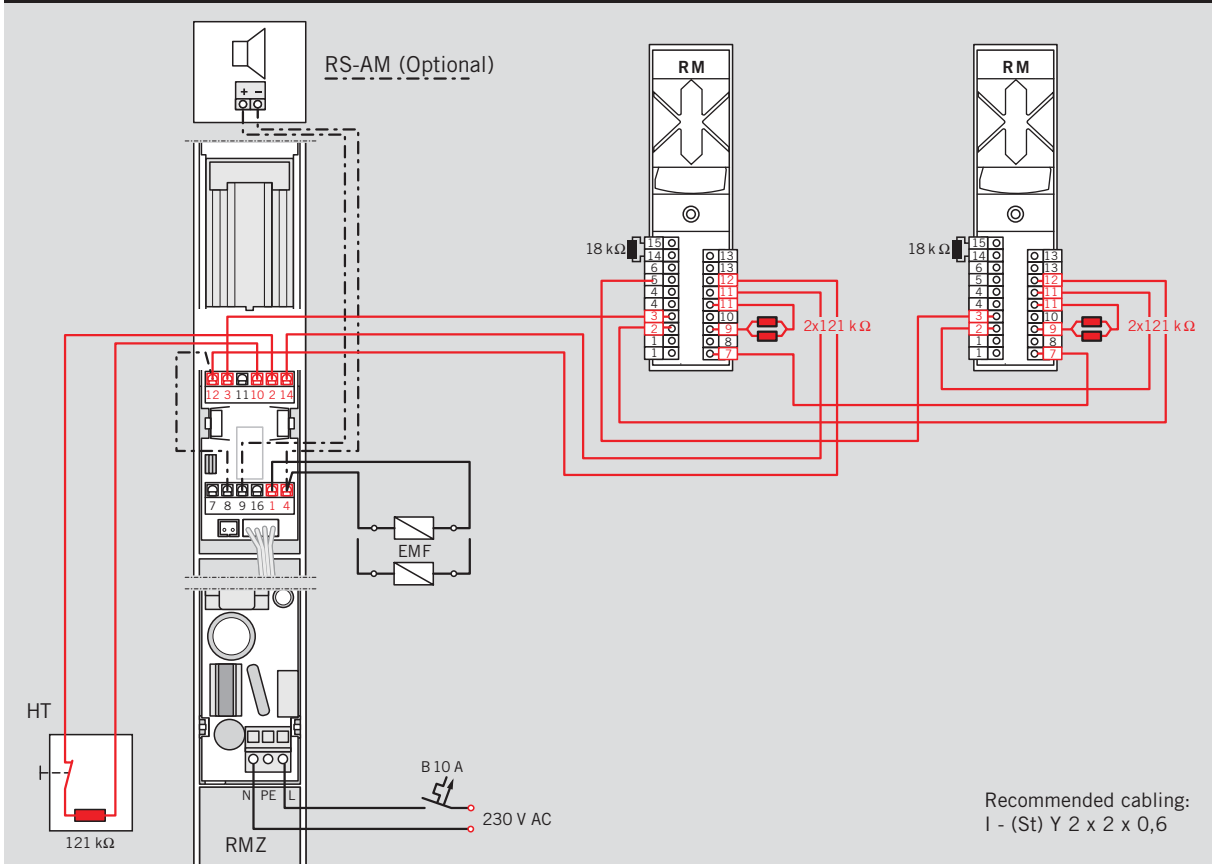
Data and features		RMZ	RM
Functions	Smoke detector Release device Power supply unit	● ● ●	● ● –
Smoke detection	Scattered light principle (optical sensor)	●	●
Fixing	Frame-mounted Ceiling-mounted	● –	– ●
Connection of other detectors	2-wire smoke switches	– ●	● ●
Total installed load (max.) for hold-open device and other detectors in W		9,8	Depends on power supply unit
Power input of internal detectors in W		1,2	0,6
LED indicators	Alarm Standby Maintenance due Contaminated condition	● ● ● ●	● ● – –
Input voltage		230 V AC ± 10 %	24 V DC +15%, -10%
Output voltage		24 V DC	24 V DC
Detector operating voltage		24 V DC +15%, -10%	24 V DC
Input current (max.) with external power supply unit, in A		–	2
Current input (max.) in mA		75	25
Floating (volt-free) change-over contact Safety extra-low voltage (SELV)		24 V AC	24 V AC
Reset	automatic can be changed to manual reset	● ●	● ●
Function checking	Smoke extraction opening test	● –	● ●
Connection terminals for external manual release		●	●
Degree of protection		IP 20	IP 20
Ambient temperature in °C		–20, +40	–20, +50
Weight in kg		0,25	0,40
Dimensions in mm	Length Overall depth Height	379 34 30	195 52 53

● yes – no

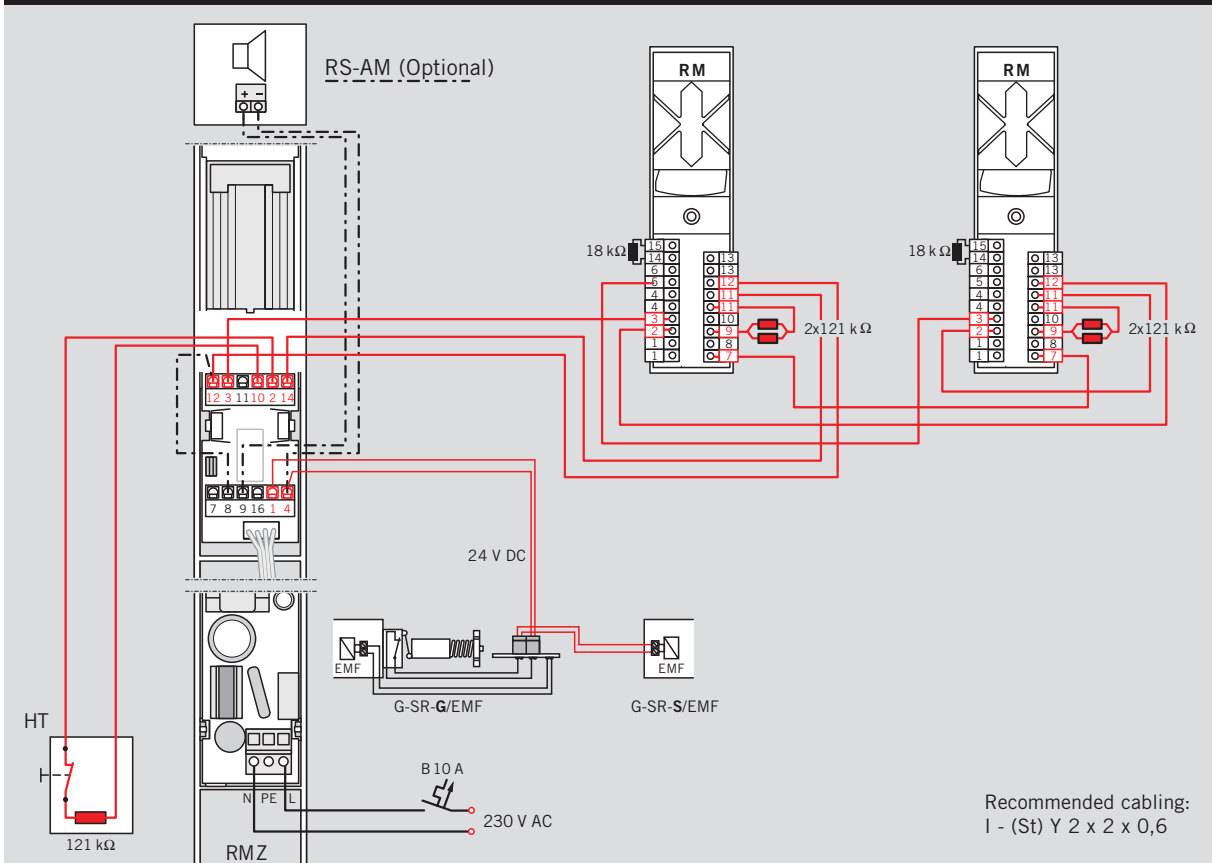
### F Approval certification

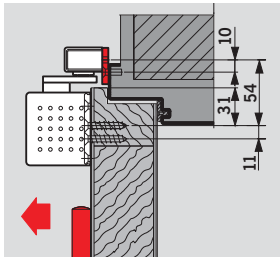
DORMA RMZ and DORMA RM units have been approved by the German Institute for Building Technology, Berlin, as hold-open release devices.

### DORMA RMZ + 2x RM



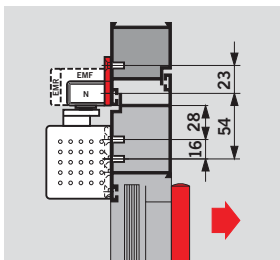
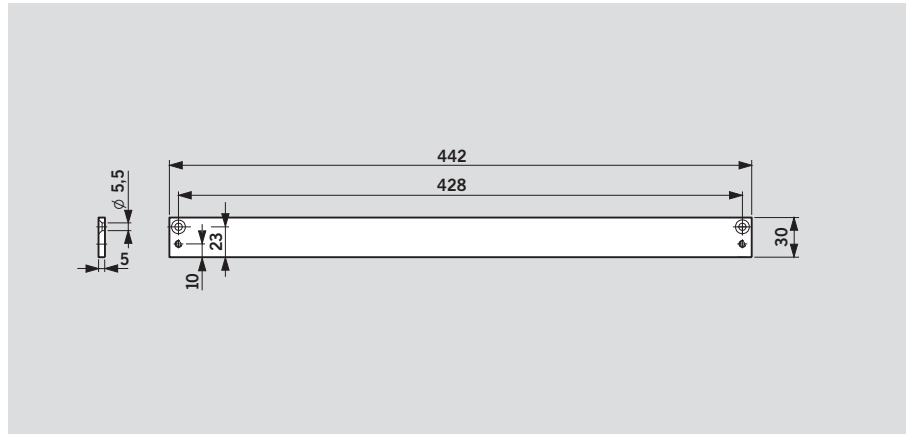
### DORMA G-SR-EMR + 2x RM





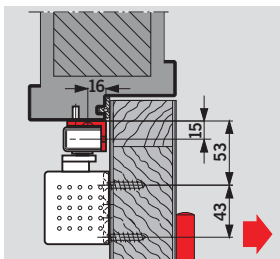
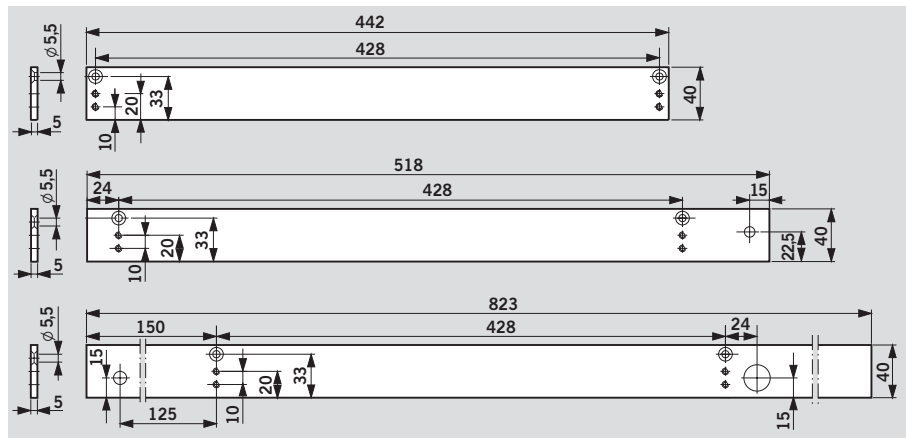
**30 mm mounting backplate for G-N**

For fixing the slide channel to the door frame where direct fixing is not possible.



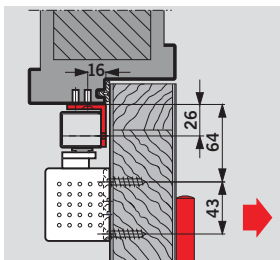
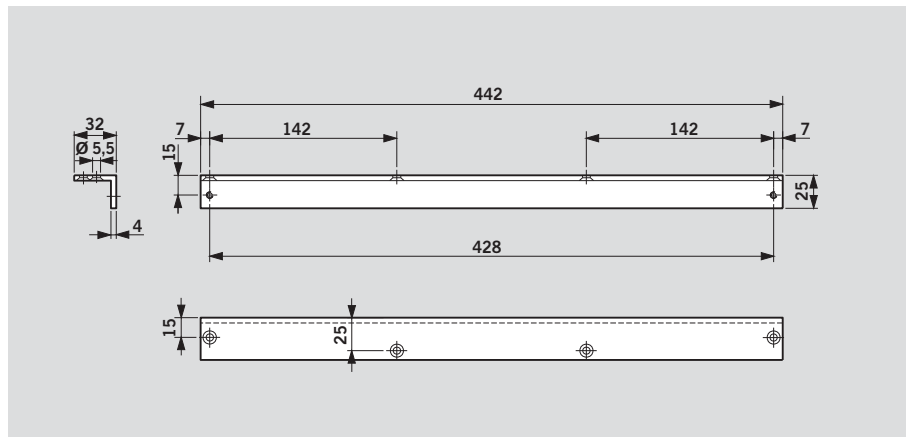
**40 mm mounting backplate for G-N, EMF, EMR**

For fixing the slide channel to the door frame where direct fixing is not possible.



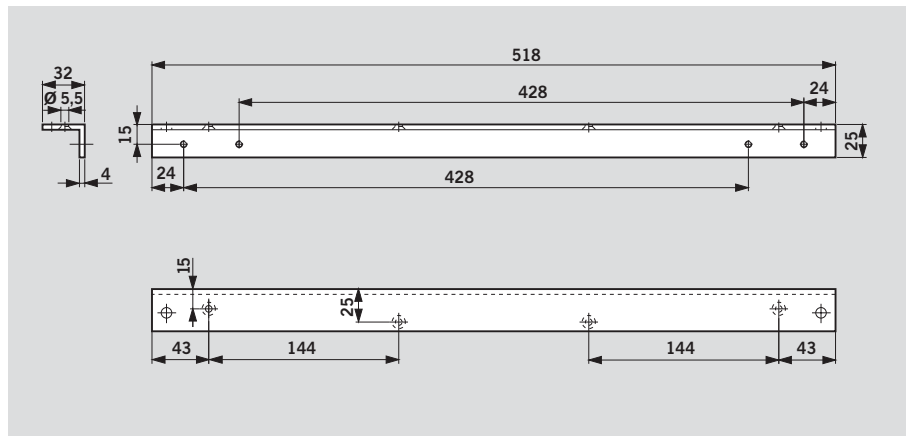
**Angle bracket for G-N**

For push-side fixing of the slide channel to door frames with a deep reveal.

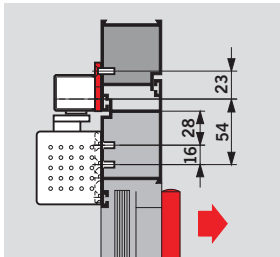


**Angle bracket for G-EMF**

For push-side fixing of the slide channel to door frames with a deep reveal.

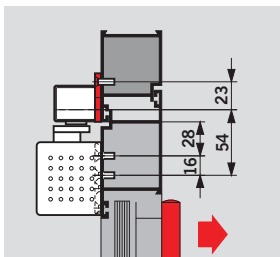
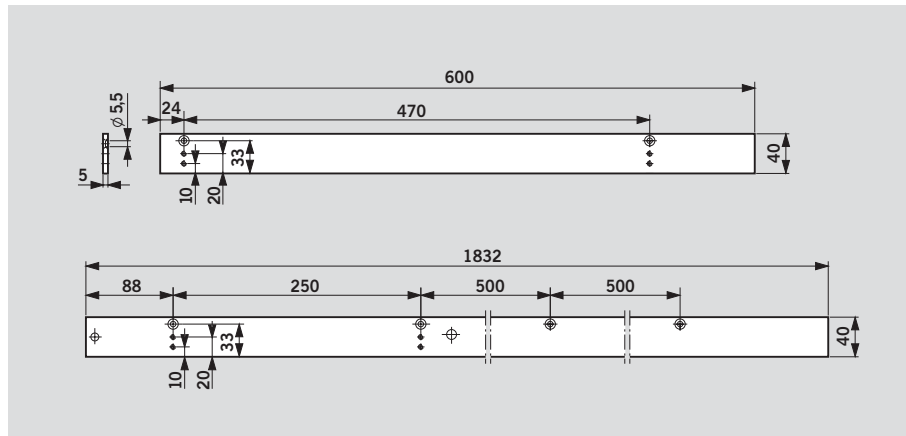






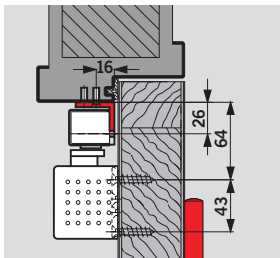
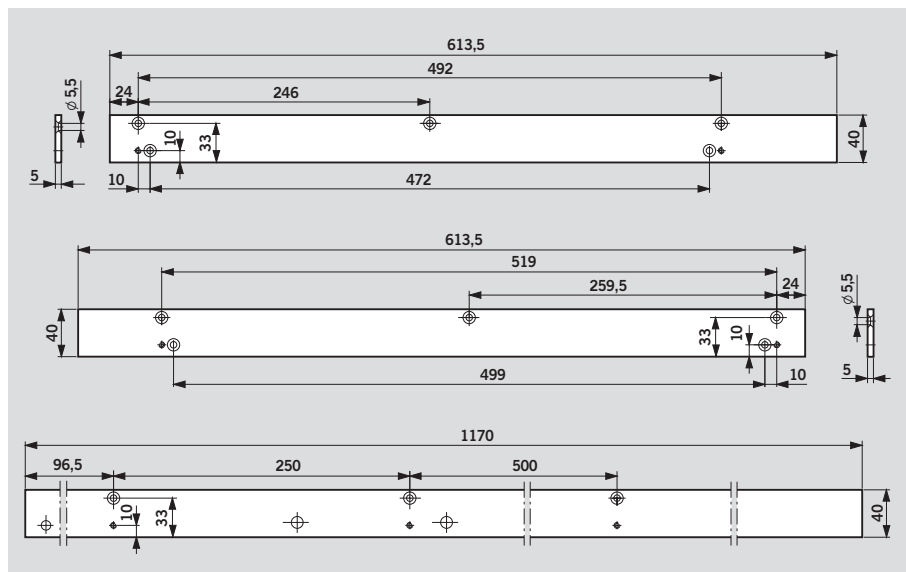
**40 mm mounting backplate for G-SR**

For fixing the slide channels to the door frame where direct fixing is not possible.



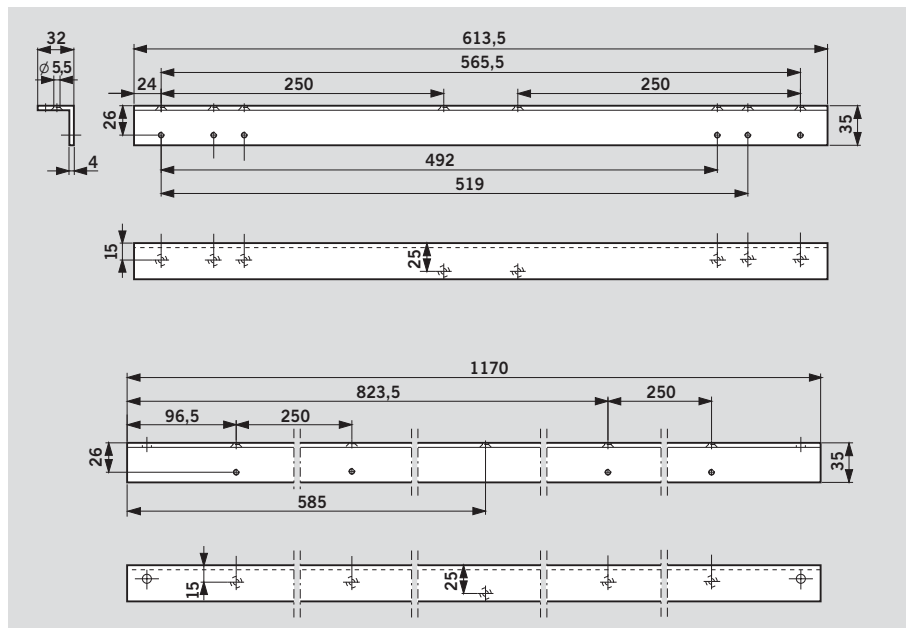
**40 mm mounting backplate for G-SR/BG**

For fixing the slide channels to the door frame where direct fixing is not possible.



**Angle bracket for G-SR/BG**

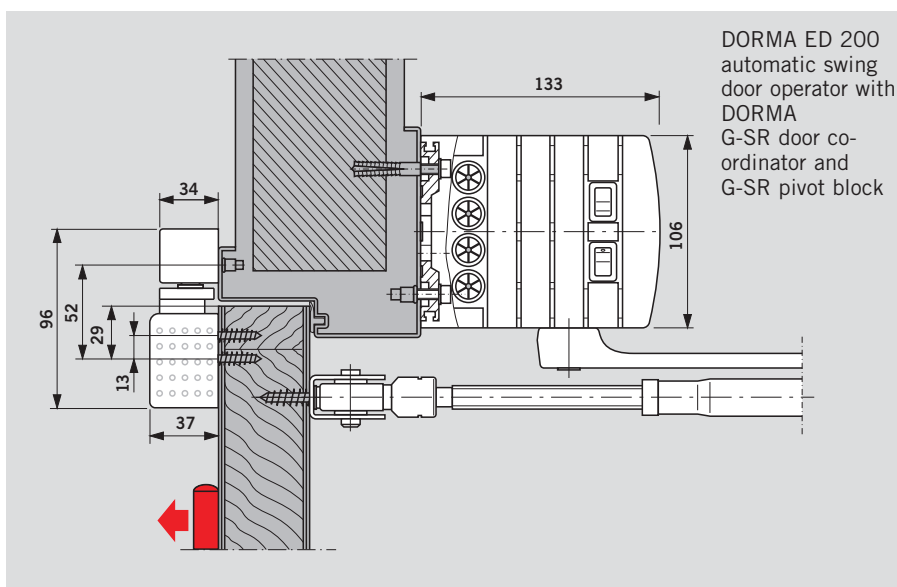
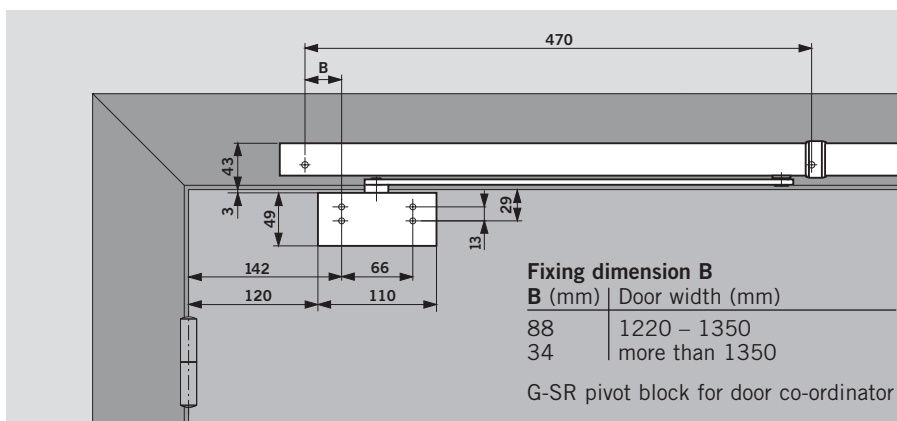
For fixing the slide channels to door frames with a deep reveal.



If the DORMA G-SR door co-ordinator is to operate independently of the TS 93 door closer, for example, in combination with the ED 200 automatic swing door operator, the connection between the door co-ordinator and the door leaf is provided by means of G-SR pivot blocks.

**F Approval certification**

The DORMA G-SR door co-ordinator with pivot blocks has been approved by e.g. the State Material Testing Authority, Dortmund/ Germany, for use on double fire and smoke doors.



The use of hold-open devices may be subject to certain conditions. These usually deal particularly with the relevant acceptance, routine inspection and maintenance requirements.

The information given on this page is designed to inform all relevant persons of the most important measures to be implemented in order to ensure best practice governing the operation of hold-open systems.

Further details can be found in the following documents:

– Guidelines for hold-open systems, published by the German Institute for Building Technology, Berlin.

– Building Regulations, England and Wales

– Relevant regulations for Scotland and N. Ireland

– EN 1155

## 1 General

**1.1** In respect of doors etc. which are held open by hold-open systems, the area needed for closure must be kept permanently free of obstructions. This area should be clearly indicated by means of lettering, floor markings or similar. If necessary, structural measures may need to be taken in order to ensure that wiring/ducting, stored goods

or structural components (e.g. false ceilings or other components) do not fall down into the area to be kept clear.

**1.2** As far as possible, smoke detectors should be used for hold-open systems. Smoke detectors should be used for hold-open systems for doors etc. in emergency exits and escape routes.

**1.3** All hold-open devices should be able to be released manually without their operational readiness being adversely affected. Door closers with electro-magnetic hold-open systems can be released by pressing lightly on the door leaf. If hold-open magnets or free-swing door closers are used, the release function is triggered by pressing a switch. The

switch must be located in the immediate proximity of the door and must not be covered when the door is held open.

## 2 Commissioning

**2.1** After the system has been fitted ready for use on-site, it should be commissioned to check that its operation is problem-free and that its installation complies with all relevant regulations. The commission-

ing should only be performed by qualified technical personnel.











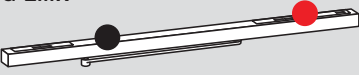





## 3 Routine inspection






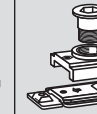
**3.1** The operator should keep the hold-open system in a permanently fit state for use and must inspect it at least once a month to ensure its functional integrity.

**3.2** In addition, it is the responsibility of the operator to ensure that all devices are checked and maintained/serviced to ensure their combined functional integrity, this to be performed at least once a year, unless a shorter

time period is stipulated in the national regulations. This inspection and servicing activity should only be carried out by a specialist or suitably qualified person.

**3.3** The scope, result and time of the routine inspections should be recorded, and these records should be retained by the operator.

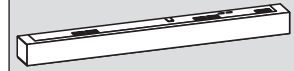
			 TS 93 B 2 – 5 ■ 430200xx 5 – 7 ■ 435200xx	 TS 93 G 2 – 5 ■ 430300xx 5 – 7 ■ 435300xx	30 mm mounting backplate zu G-N  644000xx	40 mm mounting backplate zu G-N  644100xx
Product description: see page			6	7	24	24
<b>G-N</b>  □ 640100xx	8			#	#	
<b>G-EMF</b>  □ 640200xx	10			#	#	
<b>G-EMR</b>  □ 640300xx	12			#	#	
<b>G-EMR DCW</b>  □ 640303xx	12			#	#	

40 mm mounting backplate for G-EMF	40 mm mounting backplate for G-EMR	Angle bracket for G-N	Angle bracket for G-EMF	Cushioned limit stay set for G-N	Add-on hold-open unit for G-N
 644200xx	 644500xx	 644300xx	 644400xx	 35800093	 18570000
24	24	24	24	8	8
		#		#	#
#			#		
	#				
	#				

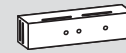
### Smoke detector system

**RMZ**  
648000xx

**RMZ DCW**  
648003xx



**RM**  
648200xx



Product description:  
see page 22

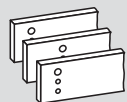
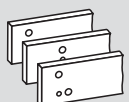

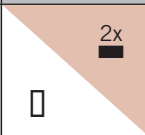
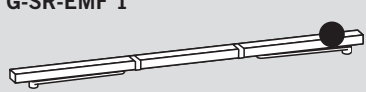
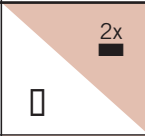
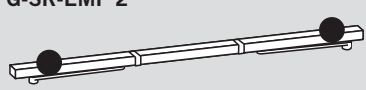
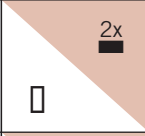
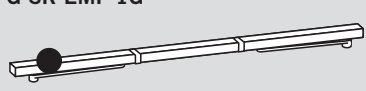
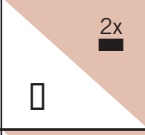
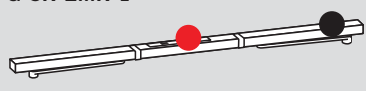
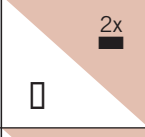
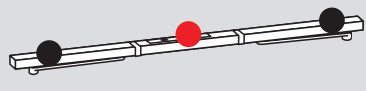
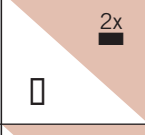
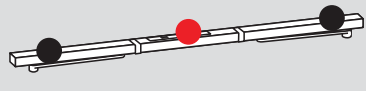
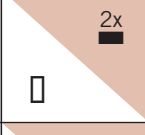
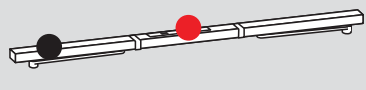
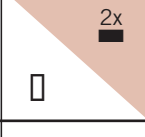
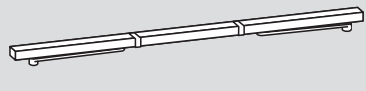
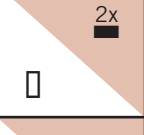
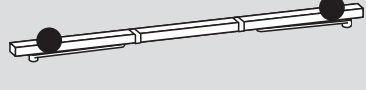
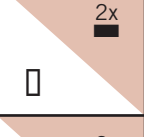
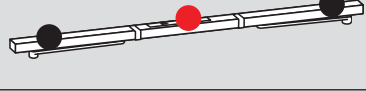
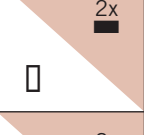
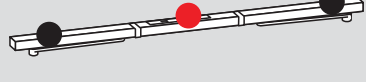

- = Closer separate
- = Slide channel assembly separate
- # = Optional accessory

#### Colour xx

Silver 01  
White (like RAL 9016) 11  
White (like RAL 9010) 10  
Special colour 09

Also available in matching "Design" finishes: Stainless steel 04  
Polished brass 05

"Design" refers to the surface finish of the products

		Door width in mm	Model	TS 93 B	TS 93 G	Mounting backplate for G-SR	Mounting backplate for G-SR/BG
		1220-1350	G-SR...VK	2 - 5 ■ 430200xx	2 - 5 ■ 430300xx		
		1350-2500	G-SR...V	5 - 7 ■ 435200xx			
		2500-3200	G-SR...VL				
Active leaf	Inactive leaf					644800xx	644900xx
Product description: see page				6	7	25	25
	<input type="checkbox"/>	VK 641010xx V 641020xx VL 641030xx	14			#	
	<input type="checkbox"/>	VK 641110xx V 641120xx VL 641130xx	14			#	
	<input type="checkbox"/>	VK 641310xx V 641320xx VL 641330xx	14			#	
	<input type="checkbox"/>	VK 641210xx V 641220xx VL 641230xx	14			#	
	<input type="checkbox"/>	V 642150xx VL 642160xx	14			#	
	<input type="checkbox"/>	V 642350xx VL 642360xx	14			#	
	<input type="checkbox"/>	V 642353xx VL 642363xx	14			#	
	<input type="checkbox"/>	V 642250xx VL 642260xx	14			#	
	<input type="checkbox"/>	V 641440xx	14				#
	<input type="checkbox"/>	V 641740xx	14				#
	<input type="checkbox"/>	V 642770xx	14				#
	<input type="checkbox"/>	V 642773xx	14				#



**DORMA TS 93 N**

Size EN 2-5  
 Size EN 5-7  
 Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Door leaf fixing on the pull side, transom fixing on the push side. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently

adjustable at valves accessible from the front. Mounting bracket with universal fixing hole system. Non-handed. Height-adjustable slide channel.

Optional:  
 With retrofittable cushioned limit stay for integration in the standard slide channel.

With retrofittable mechanical hold-open unit (RF), hold-open point adjustable between 75° and 150°.

**Use of mechanical hold-open units is not permitted on fire and smoke check doors.**

**Colour**

silver  
 white, sim. to RAL  9010  
 9016  
 stainless steel  
 polished brass  
 special colour (sim. to RAL)

**Make**

DORMA TS 93 N, EN 2-5  
 DORMA TS 93 N, EN 5-7  
 DORMA TS 93 RF, EN 2-5  
 DORMA TS 93 RF, EN 5-7

**DORMA TS 93G N**

Size EN 2-5  
 Size EN 5-7  
 Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Door leaf fixing on the push side, transom fixing on the pull side. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently

adjustable at valves accessible from the front. Mounting bracket with universal fixing hole system. Non-handed. Height-adjustable slide channel.

Optional:  
 With retrofittable cushioned limit stay for integration in the standard slide channel.

With retrofittable mechanical hold-open unit (RF), hold-open point adjustable between 75° and 150°.

**Use of mechanical hold-open units is not permitted on fire and smoke check doors.**

**Colour**

silver  
 white, sim. to RAL  9010  
 9016  
 stainless steel  
 polished brass  
 special colour (sim. to RAL)

**Make**

DORMA TS 93G N, EN 2-5  
 DORMA TS 93G N, EN 5-7  
 DORMA TS 93G RF, EN 2-5  
 DORMA TS 93G RF, EN 5-7

**DORMA TS 93 EMF**

Size EN 2-5  
 Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Pull-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessible from the front.

Mounting bracket with universal fixing hole system. Non-handed. Slide channel assembly with integral electro-mechanical hold-open, 24 V DC, conforming to EN 1155. Hold-open point (80° - 120°) and pull-off force infinitely variable. One-piece cover. Overall height 30 mm.

Approved by the German Institute for Building Technology, Berlin, for use in hold-open systems. Acceptance inspection of the system is mandatory.

**Colour**

silver  
 white, sim. to RAL  9010  
 9016  
 stainless steel  
 polished brass  
 special colour (sim. to RAL)

**Make**

DORMA TS 93 EMF,  
 EN 2-5

**DORMA TS 93G EMF**

Size EN 2-5  
 Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Push-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessible from the front.

Mounting bracket with universal fixing hole system. Non-handed. Slide channel assembly with integral electro-mechanical hold-open, 24 V DC, conforming to EN 1155. Hold-open point (80° - 120°) and pull-off force infinitely variable. One-piece cover. Overall height 30 mm.

Approved by the German Institute for Building Technology, Berlin, for use in hold-open systems. Acceptance inspection of the system is mandatory.

**Colour**

silver  
 white, sim. to RAL  9010  
 9016  
 stainless steel  
 polished brass  
 special colour (sim. to RAL)

**Make**

DORMA TS 93G EMF,  
 EN 2-5



### DORMA TS 93 EMR

Size EN 2-5  
Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Pull-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessible from the front. Mounting bracket with universal fixing hole system. Non-handed.

Slide channel assembly with integral smoke detector featuring standby and maintenance indicators and electro-mechanical hold-open, 24 V DC, conforming to EN 1155. Hold-open point (80° - 120°) and pull-off force infinitely variable. A floating (volt-free) alarm contact and connections for further detectors and external manual release devices are provided. One-piece cover. Overall height 30 mm.

Approved by the German Institute for Building Technology, Berlin, for use as a hold-open unit. Acceptance inspection of the system is mandatory.

#### Model

TS 93 EMR with integrated power pack. Power supply 230 V AC, operating voltage 24 V DC  
 TS 93 EMR DCW  
Smoke detector without power pack for connection to DCW bus.

Optional integral alarm module adding an audible signal to the visual indicator.

#### Colour

silver  
white, sim. to RAL  9010  
 9016  
 stainless steel  
 polished brass  
 special colour (sim. to RAL)

#### Make

DORMA TS 93 EMR, EN 2-5  
DORMA TS 93 EMR DCW, EN 2-5

### DORMA TS 93G EMR

Size EN 2-5  
Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Push-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessible from the front. Mounting bracket with universal fixing hole system. Non-handed. Slide channel assembly with integral smoke detector fea-

turing standby and maintenance indicators, power pack and electro-mechanical hold-open, 24 V DC, conforming to EN 1155. Hold-open point (80° - 120°) and pull-off force infinitely variable. A floating (volt-free) alarm contact and connections for further detectors and external manual release devices are provided. One-piece cover. Overall height 30 mm.

Approved by the German Institute for Building Technology, Berlin, for use as a hold-open unit. Acceptance inspection of the system is mandatory.

#### Model

TS 93 EMR with integrated power pack. Power supply 230 V AC, operating voltage 24 V DC  
 TS 93 EMR DCW  
Smoke detector without power pack for connection to DCW bus.

Optional integral alarm module adding an audible signal to the visual indicator.

#### Colour

silver  
white, sim. to RAL  9010  
 9016  
 stainless steel  
 polished brass  
 special colour (sim. to RAL)

#### Make

DORMA TS 93G EMR, EN 2-5  
DORMA TS 93G EMR DCW, EN 2-5

### DORMA RMZ

Smoke detector, Contur design, with standby and maintenance indicators, integral power pack and optical smoke sensor for transom/lintel fixing. For activation of DORMA hold-open devices. A floating (volt-free) alarm contact and connections for further detectors and external manual release devices are provided.

Can be switched to manual reset. One-piece cover. Overall height 30 mm.

Approved by the German Institute for Building Technology, Berlin, for use in a hold-open system. Acceptance inspection of the system is mandatory.

#### Model

RMZ with integrated power pack. Power supply 230 V AC, operating voltage 24 V DC  
 RMZ DCW  
Smoke detector without power pack for connection to DCW bus.  
 Optional integral alarm module adding an audible signal to the visual indicator.

#### Colour

silver  
white, sim. to RAL  9010  
 9016  
 stainless steel  
 polished brass  
 special colour (sim. to RAL)

#### Make

DORMA RMZ  
DORMA RMZ DCW

### DORMA RM

Universal, non-directional optical smoke detector, 24 V DC, for transom, lintel and ceiling fixing. For use as a smoke switch and monitoring unit for hold-open devices. A floating (volt-free) alarm contact and connec-

tions for external manual release device are provided.

Approved by the German Institute for Building Technology, Berlin, for use in a hold-open system, and approved by the VdS, Cologne, to EN 54, Part 7. Acceptance inspection of the system is mandatory.

#### Colour

silver  
white, sim. to RAL  9010  
 9016  
 stainless steel  
 polished brass  
 special colour (sim. to RAL)

#### Make

DORMA RM

**DORMA TS 93 GSR**

Size EN 2-5  
Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Pull-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessi-

ble from the front. Mounting bracket with universal fixing hole system. Non-handed. Slide channel assembly with integrated mechanical door co-ordinator, conforming to EN 1158. This system operates independently of the door closer hydraulics using a push rod clamping system with an overload

release and one-piece cover. Overall height 30 mm. Non-handed. Approved by the German Institute for Building Technology, Berlin, for use on fire and smoke check doors.

**Colour**

silver  
white, sim. to RAL  9016  
 stainless steel  
 special colour (sim. to RAL)

**Make**

DORMA TS 93 GSR

**DORMA TS 93 GSR-EMF**

Size EN 2-5  
Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Pull-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessible from the front. Mounting bracket with universal fixing hole system. Non-handed. Slide channel assembly with integrated mechanical door co-ordinator, conforming to EN 1158. With electro-mechanical

hold-open, 24 V DC, conforming to EN 1155. Hold-open point (80° - 130°) and pull-off force infinitely variable. This system operates independently of the door closer hydraulics using a push rod clamping system with an overload release and one-piece cover. Overall height 30 mm. Non-handed. Approved by the German Institute for Building Technology, Berlin, for use in hold-open systems. Acceptance inspection of the system is mandatory.

**Model**

TS 93 GSR-EMF 1  
With electro-mechanical hold-open for the inactive leaf

TS 93 GSR-EMF 2  
With electro-mechanical hold-open for the active and inactive leaf

TS 93 GSR-EMF 1G  
With electro-mechanical hold-open for the active leaf

**Colour**

silver  
white, sim. to RAL  9016  
 stainless steel  
 special colour (sim. to RAL)

**Make**

DORMA TS 93 GSR-EMF1  
DORMA TS 93 GSR-EMF 2  
DORMA TS 93 GSR-EMF 1G

**DORMA TS 93 GSR-EMR**

Size EN 2-5  
Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Pull-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessible from the front. Mounting bracket with universal fixing hole system. Non-handed. Smoke detector with standby and maintenance indicators, fully integrated in the door co-ordinator body. A floating (voltage-free) alarm contact and connections for further detectors and external manual release devices are provided. Power supply 230 V AC, operating voltage 24 V DC.

Slide channel assembly with integrated mechanical door co-ordinator, conforming to EN 1158. With electro-mechanical hold-open, 24 V DC, conforming to EN 1155. Hold-open point (80° - 130°) and pull-off force infinitely variable. This system operates independently of the door closer hydraulics using a push rod clamping system with an overload release and one-piece cover. Overall height 30 mm. Non-handed. Approved by the German Institute for Building Technology, Berlin, for use as a hold-open unit. Acceptance inspection of the system is mandatory.

**Model**

TS 93 GSR-EMR 1  
With electro-mechanical hold-open for the inactive leaf

TS 93 GSR-EMR 2  
With electro-mechanical hold-open for the active and inactive leaf

TS 93 GSR-EMR 1G  
With electro-mechanical hold-open for the active leaf

TS 93 GSR-EMR 2 DCW  
Smoke detector without power pack for connection to DCW bus. With electro-mechanical hold-open for the active and inactive leaf.

**Colour**

silver  
white, sim. to RAL  9016  
 stainless steel  
 special colour (sim. to RAL)

**Make**

DORMA TS 93 GSR-EMR1  
DORMA TS 93 GSR-EMR 2  
DORMA TS 93 GSR-EMR 1G  
DORMA TS 93 GSR-EMR 2  
DCW

### DORMA TS 93 GSR/BG

Size EN 2-5  
Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Push-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessi-

ble from the front. Mounting bracket with universal fixing hole system. Non-handed. Slide channel assembly with integrated mechanical door co-ordinator, conforming to EN 1158. This system operates independently of the door closer hydraulics using a push rod clamping system with an overload release

and one-piece cover. Overall height 30 mm. Non-handed. General building approval issued by the German Institute for Building Technology, Berlin, for use on fire and smoke check doors.

#### Colour

silver  
white, sim. to RAL  9016  
 stainless steel  
 special colour (sim. to RAL)

#### Make

DORMA TS 93 GSR/BG

### DORMA TS 93 GSR-EMF 2/BG

Size EN 2-5  
Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Push-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessible from the front. Mounting bracket with universal fixing hole system. Non-handed. Slide channel assembly with integrated mechanical door

co-ordinator, conforming to EN 1158. With electro-mechanical hold-open for the active and inactive leaf, 24 V DC, conforming to EN 1155.

Hold-open point (80° - 120°) and pull-off force infinitely variable. This system operates independently of the door closer hydraulics using a push rod clamping system with an overload release and one-piece cover. Overall height 30 mm. Non-handed.

Approved by the German Institute for Building Technology, Berlin, for use in hold-open systems. Acceptance inspection of the system is mandatory.

#### Colour

silver  
white, sim. to RAL  9016  
 stainless steel  
 special colour (sim. to RAL)

#### Make

DORMA TS 93 GSR-EMF 2/BG

### DORMA TS 93 GSR-EMR 2/BG

Size EN 2-5  
Cam action door closer conforming to EN 1154, carries the CE mark, Contur design, with rapidly decreasing opening torque/force. Push-side fixing. Closing speed, latching speed, hydraulically controlled backcheck and delayed action conveniently adjustable at valves accessible from the front. Mounting bracket with universal fixing hole system. Non-handed. Smoke detector with standby and maintenance indicators, fully integrated in the door co-ordinator body. A floating (voltage-free) alarm contact and connections for further detectors and external manual release devices are provided. Power supply 230 V AC, operating voltage 24 V DC.

Slide channel assembly with integrated mechanical door co-ordinator, conforming to EN 1158. With electro-mechanical hold-open for the active and inactive leaf, 24 V DC, conforming to EN 1155. Hold-open point (80° - 130°) and pull-off force infinitely variable. This system operates independently of the door closer hydraulics using a push rod clamping system with an overload release and one-piece cover. Overall height 30 mm. Non-handed. Approved by the German Institute for Building Technology, Berlin, for use as a hold-open unit. Acceptance inspection of the system is mandatory.

#### Model

TS 93 GSR-EMR 2/BG  
With integrated electro-mechanical hold-open for the active and inactive leaf.  
 TS 93 GSR-EMR 2 DCW/BG  
Smoke detector without power pack for connection to a DCW bus. With integrated electro-mechanical hold-open for the active and inactive leaf.

#### Colour

silver  
white, sim. to RAL  9016  
 stainless steel  
 special colour (sim. to RAL)

#### Make

DORMA TS 93 GSR-EMR 2/BG  
DORMA TS 93 GSR-EMR 2 DCW/BG

[www.dorma.com](http://www.dorma.com)

## Door Control Division worldwide

### Central Europe

DORMA GmbH + Co. KG  
Breckerfelder Str. 42-48  
D-58256 Ennepetal  
Tel. +49 23 33/7 93-0  
Fax +49 23 33/7 93-495

### Australia

DORMA Door Controls Pty. Ltd.  
52 Abbott Road  
Hallam/Victoria 3803  
Australia  
Tel. +61 3/97 96 35 55  
Fax +61 3/97 96 39 55

### China

DORMA Door Controls (Suzhou)  
Co. Ltd.  
No. 9, Hong Feng Road  
Suzhou Singapore Industrial Park  
Suzhou, 215021  
P. R. of China  
Tel. +86 512/67612481  
Fax +86 512/67614582

DORMA Door Controls Pte. Ltd.  
Room 701, Technology Plaza  
651 King's Road  
North Point  
Hong Kong  
Tel. +825/250 34632  
Fax +825/288 75370

### Emerging Markets

DORMA GmbH + Co. KG  
Breckerfelder Str. 42-48  
D-58256 Ennepetal  
Tel. +49 23 33/7 93-0  
Fax +49 23 33/7 93-495

DORMA Door Controls (Pty.) Ltd.  
Kings Court, 4A Mineral Crescent  
ZA-2000 Crown/Gauteng  
South Africa  
Tel. +27 11/8 30 02 80  
Fax +27 11/8 30 02 91

### Far East

DORMA Far East Pte. Ltd.  
No. 31 Gul Lane,  
Singapore 629425  
Tel. +65 62 68/76 33  
Fax +65 62 65/79 14

### France

DORMA France S.A.S.  
Europarc  
42, rue Eugène Dupuis  
F-94046 Créteil  
Tel. +33 1/41 94 24 00  
Fax +33 1/41 94 24 01

### Gulf

DORMA Gulf Door Controls FZE  
Jebel Ali Free Zone,  
Roundabout 8,  
Unit VC 02  
Dubai, United Arab Emirates  
Tel. +971 48/83 90 14  
Fax +971 48/83 90 15

### North America

DORMA Architectural Hardware  
DORMA Drive, Drawer AC  
Reamstown, PA 17567  
Tel. +1-800-523-8483  
Fax +1-800-274-9724

### Scanbalt

DORMA Danmark A/S  
Sindalvej 6 - 8  
DK-2610 Rødovre  
Tel. +45 44/54 30 00  
Fax +45 44/54 30 01

### South America

DORMA Sistemas de Controles  
para Portas Ltda.  
Av. Piracema, 1400  
Centro Empresarial Tambore  
CEP 06400 Barueri/  
São Paulo, Brasil  
Tel. +55 11/41 91 32 44  
Fax +55 11/41 91 21 93

### South-East Europe

DORMA AUSTRIA GmbH  
Pebering Strass 22  
A-5301 Eugendorf  
Tel. +43 62 25/2 84 88  
Fax +43 62 25/2 84 91

### South Europe

DORMA Italiana S.r.l.  
Via. A. Canova 44/46  
I-20035 Lissone (MI)  
Tel. +39 039/24 40 31  
Fax +39 039/24 40 33 10  
DORMA Ibérica, S.A.  
Camino San Martin de la Vega, 4  
E-28500 Arganda del Rey  
(Madrid)  
Tel. +34 91/8 75 78 50  
Fax +34 91/8 75 78 81

### UK/Ireland

DORMA UK Ltd.  
Door Controls Division  
Wilbury Way  
Hitchin  
Hertfordshire SG4 0AB  
Tel. +44 14 62/47 76 00  
Fax +44 14 62/47 76 01



Door Control



Automatic



Glass  
Fittings and  
Accessories



Security/  
Time and  
Access (STA)



Movable  
Walls

