



Cam action door closer system

DORMA TS 93

in Contur Design







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).

Contents	
Features and functions	Page 4
DORMA TS 93 B Door closer for pull-side door leaf fixing/ push-side transom fixing	6
DORMA TS 93 G Door closer for push-side door leaf fixing/ pull-side transom fixing	7
DORMA G-N Standard slide channel design	8
DORMA RF Hold-open unit	8
DORMA G-EMF Slide channel with electro-mechanical hold-open	10
DORMA G-EMR Slide channel with electro-mechanical hold-open and integral smoke detector	12
DORMA G-SR Door co-ordinator slide channel for pull-side fixing	14
DORMA G-SR-EMF Door co-ordinator slide channel with integral electro-mechanical hold-open for pull-side fixing	14
DORMA G-SR-EMR Door co-ordinator slide channel with electro-mechanical hold-open and integral smoke detector for pull-side fixing	14
DORMA G-SR/BG Door co-ordinator slide channel for push-side fixing	18
DORMA G-SR-EMF/BG Door co-ordinator slide channel with integral electro-mechanical hold-open for push-side fixing	18
DORMA G-SR-EMR/BG Door co-ordinator slide channel with electro-mechanical hold-open and	
integral smoke detector for push-side fixing DORMA RMZ, DORMA RM	18
Frame-mounted and ceiling-mounted smoke detectors	22
Accessories	24
Hold-open systems Regulations and information	27
Range of equipment and optional accessories Single doors	28
Range of equipment and optional accessories Double doors	30
Specification texts Single doors	32
0 10 11 1	

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/G1)
		EN	ΕN
Variable closing force	Spring strength	2-5	5-7
Standard doors ²⁾	≤ 1250 mm	•	-
	≤ 1600 mm	-	٠
External doors,	≤ 1250 mm	•	-
outward opening ²⁾	≤ 1600 mm	_	•
For fire and	≤ 1250 mm	•	-
smoke check doors ²⁾	≤ 1600 mm	_	•
Non-handed		•	•
Arm assembly type	Standard	_	-
	Slide channel	•	٠
Closing force variable by madjustment screw	eans of	•	•
Closing speed adjustable by	•	•	
Latching speed	at arm	-	-
adjustable	at valve	•	٠
Backcheck (BC/ÖD)	adjustable		
	at valve	•	•
Delayed action (DC/SV)			
adjustable at valve		•	•
Hold-open		0	0
Weight in kg		3,5	5,2
Dimensions in mm	Length (L)	275	285
	Overall depth (B)	53	62
	Height (H)	60	/1
Door closer tested to EN 11			
Hold-open devices tested to EN 1155			
Door co-ordinators tested to EN 1158			
€ mark for building produce			
e			

• yes – no option

¹⁾ B = Standard model for pull-side door leaf fixing/push-side transom fixing

 ${\rm G}={\rm Special}$ model for push-side door leaf fixing/pull-side transom fixing. $^{2)}$ 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.

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.



1 Fully controlled closing action with adjustable speed

- 2 Adjustable latch speed
- 3 Adjustable backcheck
- 4 Adjustable delayed action





3 Adjustable backcheck

Delayed action

The delayed action feature retards the closing cycle between 120° and 70° (approximate values for pullside 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° is possible with this fixing method. In most cases, a wall recess may have to be provided for the door closer. Example: Anticlockwiseclosing (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.

Certifire

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° 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. Example: Anticlockwiseclosing (ISO 6) door; mirrored arrangements apply to clokkwise-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.

Certifire

Door closers



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: Anticlockwiseclosing (ISO 6) door; mirrored arrangements apply to clokkwise-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.

Certifire

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: Anticlockwiseclosing (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.

Certifire

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



150° 75° Hold open range

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 holdopen 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**

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 nonhanded.



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, \pm 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.)









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

Technical data	
Power supply:	230 vAC, ± 10%
Operating voltage (internal):	24 vDC
Max. output rating:	9.8 W
Power input EMF:	1.4 W
Rated for continuous duty:	100%
Release force:	adjustable

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 holdopen unit, in conjunction with the DORMA RMZ-K/S frame-mounted smoke detector.



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 typetested 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 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 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.



Active leaf

Inactive leaf

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 nonhanded 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 holdopen unit.



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-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-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).

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.



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.





• = Door stop

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-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.

Technical data

Power supply EMR:	230 vAC ± 10%
Max. output rating EMR:	9.8 W
Operating voltage EMF:	24 vDC \pm 15%
Power input EMF 1:	1.4 W
EMF 2:	2.8 W
Rated for continuous duty:	100%
Release 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)







* In the case of particularly large and heavy doors (over 2500 mm), we recommend that DORMA EM hold-open magnets be employed instead of the electro-mechanical hold-open unit.

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

The DORMA G-SR/BG pushside 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

exit doors which are opened at the inactive leaf.

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 coordinators 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 coordinators 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	
Power supply EMR:	230 vAC ± 10%
Max. output rating EMR:	9.8 W
Operating voltage EMF:	24 vDC \pm 15%
Power input EMF 2:	2.8 W
Rated for continuous duty:	100%
Release 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)

* In the case of particularly large and heavy doors, we recommend that DORMA EM hold-open magnets be employed instead of the electro-mechanical hold-open unit.

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) changeover 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) changeover 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) changeover contact and connections for further detectors and external manual release devices are also provided.

Data and feat	tures	RMZ	RM
Functions Smoke detector Release device Power supply unit		•	•
Smoke detection	Scattered light principle (optical sensor)	•	٠
Fixing Frame-mounted Ceiling-mounted		•	- •
Connection of other detectors	2-wire smoke switches	•	•
Total installed for hold-open and other dete	load (max.) device ectors in W	9,8	Depends on power supply unit
Power input of internal detect	cors in W	1,2	0,6
LED Alarm indicators 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 opera	24 V DC +15%, -10%	24 V DC	
Input current (power supply ((max.) with external unit, in A	-	2
Current input	(max.) in mA	75	25
Floating (volt-f Safety extra-lo	ree) change-over contact w voltage (SELV)	24 V AC	24 V AC
Reset	automatic can be changed to manual reset	•	•
Function checking	Smoke extraction opening test	•	•
Connection ter for external ma	•	•	
Degree of prot	IP 30	IP 20	
Ambient temp	-20, +40	-20, +50	
Weight in kg		0,25	0,40
Dimensions Length in mm 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.

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 coordinator 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 commissioning 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. Single doors

Hold-open device			TS 93 B	TS 93 G	30 mm mounting	40 mm mounting
Smoke detector					zu G-N	zu G-N
			2 - 5 ■ 430200xx 5 - 7 ■ 435200xx	2 - 5 ■ 430300xx 5 - 7 ■ 435300xx	644000xx	644100xx
Product description: see page			6	7	24	24
G-N	[] 640100xx	8			#	#
G-EMF	☐ 640200xx	10			#	#
G-EMR	640300xx	12			#	#
G-EMR DCW	☐ 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	Smoke detector system
644200xx	644500xx	644300xx	644400xx	35800093	18570000	648000xx
24	24	24	24	8	8	RMZ DCW
		#		#	#	
#			#			
	#					RM 648200xx
	#					Product description: see page 22

Also available in matching "Design" finishes:	Stainless steel Polished brass	0
"Design" refers to the surface finish o	f the products	

Hold-open device		TS 93 B	TS 93 G	Mounting	Mounting
Smoke detector			-33	for G-SR	for G-SR/BG
Active lost		2 – 5 ■ 430200xx 5 – 7	2 - 5		
Active lear		435200xx	430300xx	644800xx	644900xx
	1	0	/	20	20
G-SR U VK 641010XX V 641020XX VL 641030XX VL 641030XX	14	2x		#	
G-SR-EMF 1	14	2x		#	
G-SR-EMF 2	14	2x		#	
		L			
G-SR-EMF 1G	14	2x		#	
G-SR-EMR 1	14	2x ■		#	
G-SR-EMR 2	14	2×		#	
G-SR-EMR 2 DCW	14	2x		#	
G-SR-EMR 1G	14	2x		#	
G-SR/BG [] V 641440xx	14		2x		#
G-SR-EMF 2/BG	14		2x		#
G-SR-EMR 2/BG	14		2x		#
G-SR-EMR 2 DCW/BG	14		2x		#

Angle bracket for G-SR/BG	Pivot block	Cushioned limit stay
A La		
		BEN
644700xx	645000xx	18020000
25	26	8
	#	#
#	#	#
1	1	1

Smoke detector system	
RMZ 648000xx	RM 648200xx
RMZ DCW 648003xx	
	••••
Product description: see page 22	

	Door width (mm) B BG	
G-SR / G-SR-EMFVK	1220 - 1350	-
V	>1350 - 2500	1500 - 2500
VL	>2500 - 3200	-
G-SR-EMRV	1700 – 2500	1800 – 2500
VL	>2500 – 3200	–

Hold-open devices tested to EN 1155 (max. EN 5)

	 Closer separate Slide channel assembly separate Optional accessory 	
	Colour xx Silver White (like RAL 9016) Special colour	01 11 09
Also available in matching "Design" finishes:	Stainless steel	04

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:

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 holdopen 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. Nonhanded. Height-adjustable slide channel.

Optional:

□ With retrofittable cushioned limit stay for integration in the standard slide channel. \Box With retrofittable mechanical hold-open unit (RF), hold-open point adjustable between 75° and 150°.

Use of mechanical holdopen units is not permitted on fire and smoke check doors. Colour □ silver

white, sim. to RAL \Box 9010 \Box 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. Pullside 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. Pushside 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

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.

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. Pushside 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, 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.

Colour

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

□ Optional integral alarm

module adding an audible

Colour

□ silver

Make

EN 2-5

Colour

□ silver

Make

EN 2-5

□ stainless steel

□ polished brass

□ stainless steel

□ polished brass

signal to the visual indicator.

white, sim. to RAL \Box 9010

□ special colour (sim. to RAL)

DORMA TS 93 EMR, EN 2-5

DORMA TS 93 EMR DCW,

□ Optional integral alarm

module adding an audible

signal to the visual indicator.

white, sim. to RAL \Box 9010

□ special colour (sim. to RAL)

DORMA TS 93G EMR, EN 2-5

DORMA TS 93G EMR DCW,

 $\Box 9016$

□ 9016

Make

DORMA RMZ DORMA RMZ DCW

DORMA RM

are provided.

DORMA RMZ

Smoke detector, Contur

design, with standby and

maintenance indicators,

integral power pack and

optical smoke sensor for

For activation of DORMA

A floating (volt-free) alarm

contact and connections for

further detectors and exter-

nal manual release devices

transom/lintel fixing.

hold-open devices.

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 connecCan 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.

tions for external manual

release device are provided.

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.

Approved by the German

Technology, Berlin, for use

in a hold-open system, and

Cologne, to EN 54, Part 7.

Acceptance inspection of

the system is mandatory.

Institute for Building

approved by the VdS,

□ silver white, sim. to RAL \Box 9010

- □ stainless steel
- □ polished brass
- □ special colour (sim. to RAL)

□ 9016

Make

Colour

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. Pullside 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. Pullside 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

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. Pullside 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 (volt-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 electromechanical 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 onepiece 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 electromechanical 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

TS 93 GB

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. Pushside 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. 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)

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. Pushside 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 electromechanical 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

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. Pushside 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 (volt-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 electromechanical 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 onepiece 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 electromechanical 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

Movable Walls

Door Control Division worldwide

Central Europe

DORMA GmbH + Co. KG Breckerfelder Str. 42–48 D-58256 Ennepetal Tel. +49 2333 793-0 Fax +49 2333 793-495

Australasia

DORMA Door Controls Pty. Ltd. 46-52, Abbott Road Hallam/Victoria 3803 Australia Tel. +61 3979 63555 Fax +61 3979 63955

China/Hong Kong

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. +852 25034632 Fax +852 28875370

Emerging Markets

DORMA GmbH + Co. KG Breckerfelder Str. 42–48 D-58256 Ennepetal Tel. +49 2333 793-0 Fax +49 2333 793-495

DORMA Door Controls (Pty.) Ltd. Kings Court 4A Mineral Crescent ZA-2000 Crown/Gauteng South Africa Tel. +27 11 8300280 Fax +27 11 8300291

Far East DORMA Far East Pte. Ltd. No. 31 Gul Lane Singapore 629425 Tel. +65 6268 7633 Fax +65 6265 7995

 France

 DORMA France S.A.S.

 Europarc

 42, rue Eugène Dupuis

 F-94046 Créteil

 Tel. +33 1 41942400

 Fax +33 1 41942401

Gulf

DORMA Gulf Door Controls FZE Jebel Ali Free Zone South Plot No. S 20135 Road No. SW 301 G P.O. Box 17268 Dubai – United Arab Emirates Tel. +971 4 8020400 Fax +971 4 8869100/8869101

North America

DORMA Architectural Hardware DORMA Drive, Drawer AC Reamstown, PA 17567-0411 Tel. +1 800 5238483 Fax +1 800 2749724

Scanbalt

DORMA Sverige AB F O Petersons Gata 24 SE-421 31 Västra Frölunda Tel. +46 31 289520 Fax +46 31 281739

South America

DORMA Sistemas de Controles para Portas Ltda. Av. Piracema, 1400 Centro Empresarial Tambore CEP 06400-933 Barueri/ São Paulo, Brasil Tel. +55 11 46899280 Fax +55 11 46899215

South-East Europe

DORMA AUSTRIA GmbH Pebering Strass 22 A-5301 Eugendorf Tel. +43 6225 284880 Fax +43 6225 28491

South Europe

DORMA Italiana S.r.I. Via. Canova 44/46 I-20035 Lissone (MI) Tel. +39 039 244031 Fax +39 039 24403310

DORMA Ibérica, S.A. Camino San Martin de la Vega, 4 E-28500 Arganda del Rey (Madrid) Tel. +34 91 8757850 Fax +34 91 8757881

UK/Ireland

DORMA UK Ltd. Wilbury Way Hitchin GB-Hertfordshire SG4 0AB Great Britain Tel. +44 1462 477600 Fax +44 1462 477601

WN 053 115 51532, 06/08, TS 93 Contur, GB, x. DD. xx/08 · Subject to change without notice