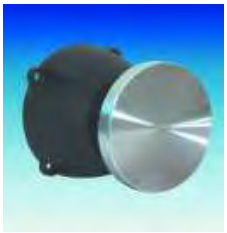
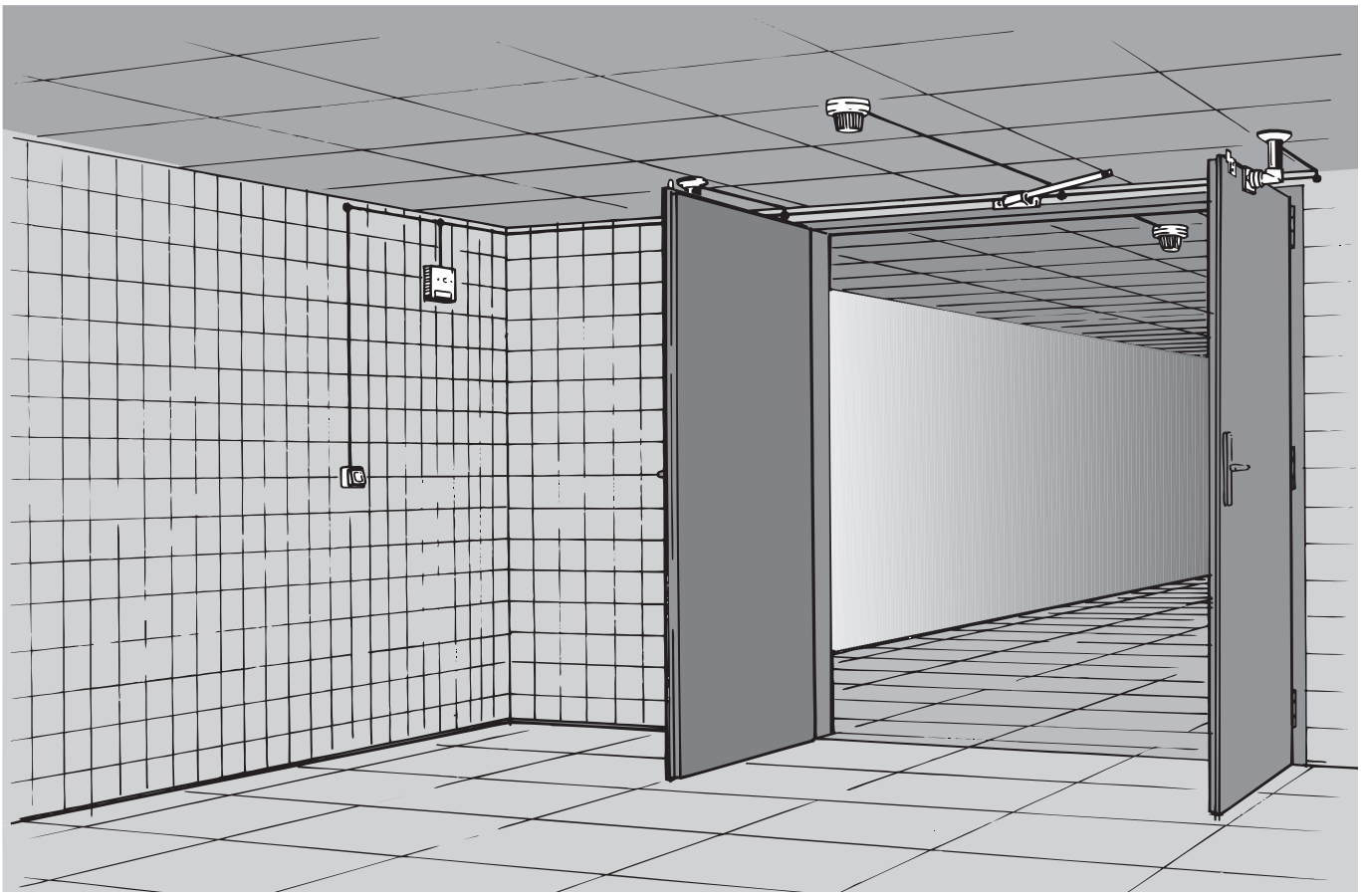
Fire Door Control Solutions



Components of a Hold-Open System



Components

State 05/2012

Smoke Detector RM 2000

RM 2000 smoke detectors are used in hold-open systems for fire protection doors. They have been tested according to the strict regulations of the European standard EN 54 (part 7).

The smoke detector is operated by a potential free relay contact when the smoke density in a room exceeds a certain level, or when the integrated temperature sensor records a rise in temperature of more than 65 °C. The relay contact can be used to control electromagnets, door closers and door drive units, thus enabling fire doors to be closed automatically.

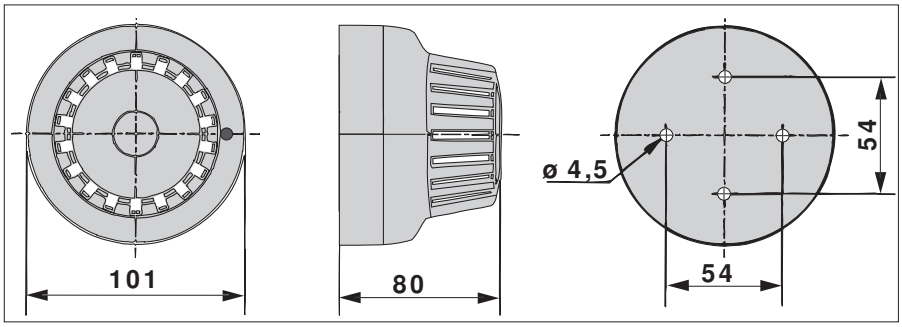
The alarm signal can be passed on through two separate potential free relay contacts. Additionally, a clearly visibly red diode on the smoke detector indicates the alarm system's operational situation.

The RM 2000 smoke detector has been approved for the use on hold-open systems by the Institute for Building Engineering in Berlin.
(Approval No. Z-6.5-1903)

Technical Data

Supply voltage	24 VDC (+15 %, -10 %)
Power consumption	35 mA
Alarm cignal level smoke unit	0.2 dB/m
Alarm signal level temperature sensor	65 °C
Current-carrying capacity relay contact	24 V/1.0 A
IP rating	IP 42

Dimensions



Installation

When using the smoke detector on fire protection doors please follow the guidelines for hold-open systems set by the Institute of Building Engineering in Berlin.

The smoke detector is **not** equipped with a mains transformer so a direct voltage of 24 V is required at terminals ① and ⑥ (see wiring diagram below).

A potential-free relay contact (contact "a") is available at terminals ② and ③ which opens in event of alarm or power failure. An additional relay contact (contact "b") is provided at terminals ④ and ⑤.

Contact "a" always opens, but contact "b" can either open or close, depending on the smoke detector model.

- Model 040500: "b" opens upon alarm
- Model 040502: "b" closes upon alarm

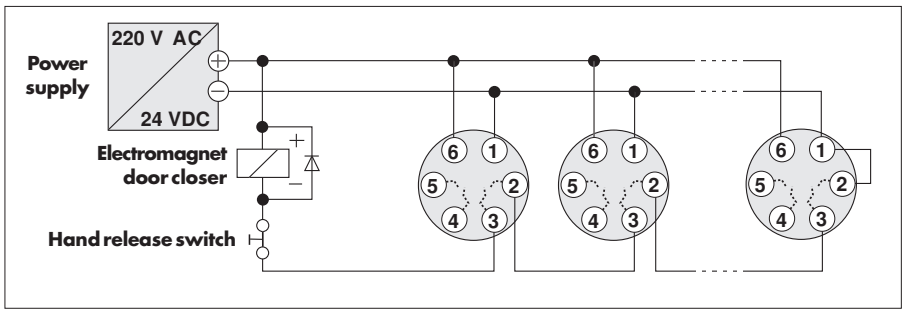
If you require several smoke detectors to be wired in series, you need to place bridges at terminals ① and ② of the last smoke detector (see wiring diagram below).

Insert the smoke detector into the socket so that the light diode coincides with the mark in the socket. Then turn it to the right for about 15 mm until it snaps in. It is now ready for operation.

The hand switch can be mounted anywhere on the feed line which is connected to the electromagnet or the doorcloser.

Advice: Protect the smoke detector from dust, colour mist and moisture to prevent malfunction.

Connection Example



Order Information

RM 2000 smoke detector with integrated thermo sensor	part no. 040500
as no. 040500, but relay contact "b" closes upon alarm	part no. 040502
Socle for RM 2000 smoke detector	part no. 040540
Bracket for wall mounting	part no. 040570
24 VDC/450 mA power pack	part no. 040545
24 VDC/800 mA power pack	part no. 040552
Hand release switch	part no. 040005

Please see our special catalogues for DICTAMAT door operators and bar magnets.

RM 3000+ Smoke Detector

with RS 3000 Relay Base for Hold-Open Systems

DICTATOR RM 3000+ smoke detectors and WM 3000+ heat detectors are used in hold-open systems to automatically close fire protection doors in the event of alarm.

RM 3000+ optical smoke detectors work on the principle of photo-electric detection of scattered light without using any radio-activity. To ensure maximum reliability, three consecutive sensed alarm signals are needed to trigger off alarm and to switch off the power supply to the hold-open magnets on the door.

The WM 3000+ heat detector comprises a pair of matched heat detectors. One of them is exposed and therefore responds quickly to changes in air temperature, whereas the second one is insulated and responds more slowly. The relay cuts off the power supply when a certain temperature is reached or in the event of a rapid increase in the temperature of the surrounding air.

The detectors of this series comply with the EN 54 directives. They have been tested and are approved together with DICTATOR electromagnets (certificate Z-6.5-1903).

Technical Data

• Voltage supply	9 to 33 VDC
• Power consumption	25 mA at 24 V; 62 mA on alarm
• Operating temperature (smoke detector)	-20 °C to +60 °C (prevent icing)
• Alarm temperature (heat detector)	+60 °C; other temperatures on request
• Breaking capacity of contacts	1 A at 24 VDC
• Contact voltage	50 V (max)
• Contact current	1 A (non inductive)
• IP rating	IP 54 (heat detector), IP 43 (RM 3000+)

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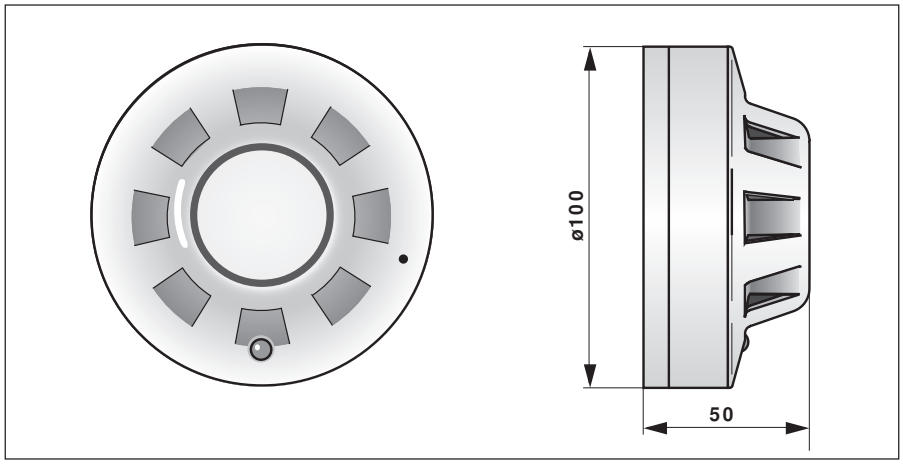
Dimensions

All detectors in the 3000+ range fit into the RS 3000 relay base . If a smoke detector should prove unsuitable for a particular application (e.g. it is exposed to smoke or dust) it can simply be replaced with a heat detector from the 3000+ range. However please observe the relevant regulations concerning the use of heat detectors in hold-open systems.

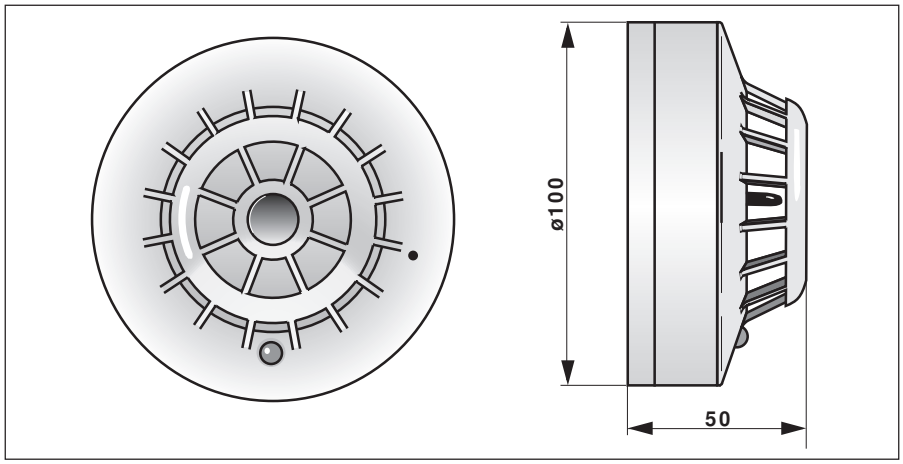
To protect the sensing chamber from pollution during construction work, all detectors are delivered with a red protection cap which must be removed when the hold-open system is put into operation.

To facilitate the installation of detectors in suspended ceilings, a special base with a mounting bar (part no. 040842) is available.

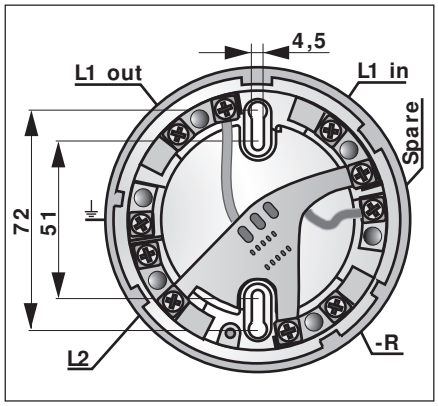
1. Optical Smoke Detector



2. Heat Detector



3. RS 3000 Relay Base



The two slots in the base make it very easy to install as precise fixing holes in the ceiling are not required.

The wide interior diameter of the bases in the 3000 range allows for ease of access to wires and the five terminals. Wiring is possible both from the back or from the side (knock-outs in the base).

The detector is plugged in by turning it clockwise. An anti-theft feature is included. A missing detector means alarm.

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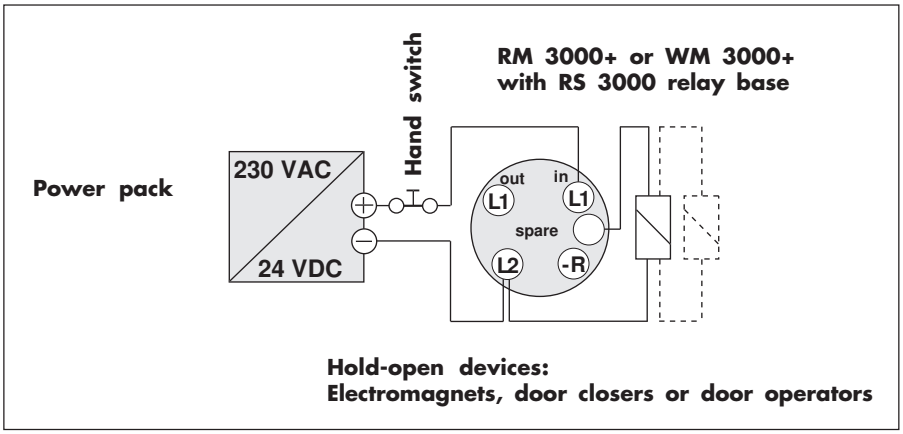
RM 3000+ Smoke Detector, WM 3000+ Heat Detector

Easy to Connect, with Integrated Relay

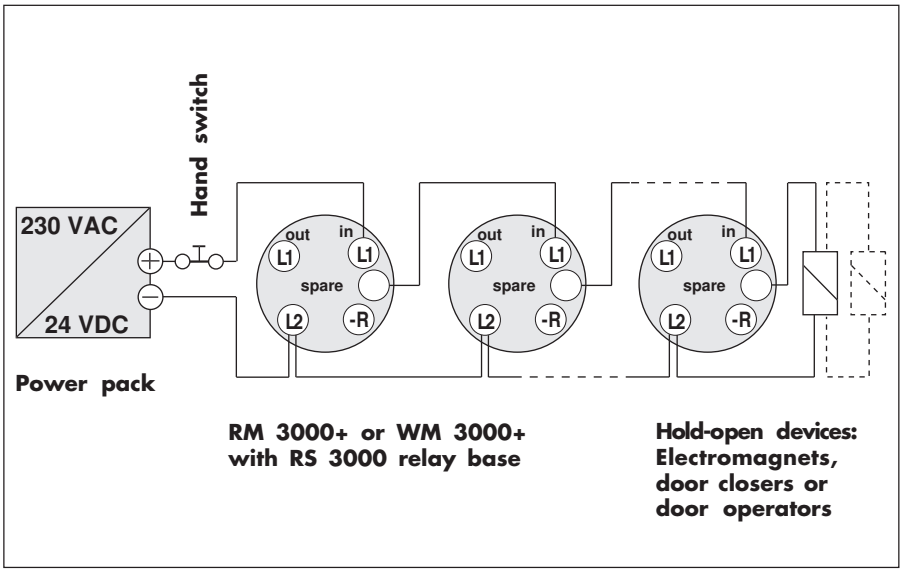
Connect the required number of smoke detectors (see relevant regulations) to one of our power packs. When choosing the power pack please make sure that the total power consumption of all connected detectors does not exceed the supply current of the power pack. These smoke detectors consume maximum 62 mA in the event of alarm.

The hand switch needs to be placed in the wiring to the first detector. The electrical hold-open magnets are connected to the last detector in the detector circuit. This allows for a simple, linear wiring.

Wiring Diagram for Single Detector



Wiring Diagram for Three Detectors



If you need to install more than 3 detectors, simply place them within the circuit. The power pack and hand switch must always be connected to the first detector, and the hold-open magnets must be wired to the relay base of the last detector in the circuit. DICTATOR electromagnets and door operators are provided with the necessary spark extinction diode as standard. If the base relay switchable load is not sufficient, you need to connect an additional relay. We will be happy to provide the necessary information.

Hold-open systems must be tested every month and require annual maintainance.

IMPORTANT: after an alarm a RESET is necessary. This can be done either by pressing the hand switch or by removing the detector from the relay base and screwing it back again.

RM 3000+ Smoke Detector, WM 3000+ Heat Detector

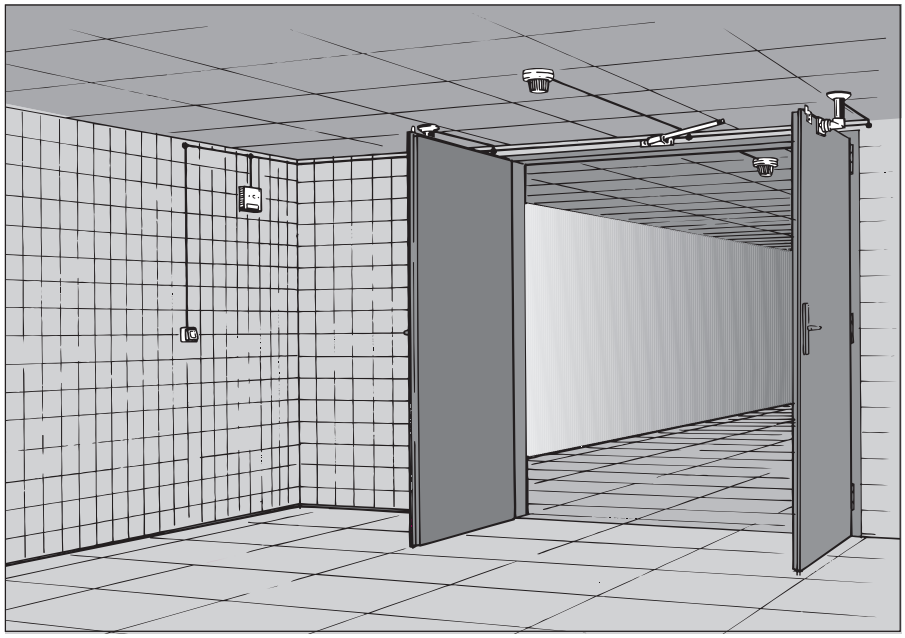
DICTATOR smoke detectors and DICTATOR heat detectors are equipped with an integrated relay in the base. This switches off electromagnets, door closers or door operators in the event of fire. The doors then close automatically.

Please observe the relevant regulations for hold-open systems in your country.

Important for maintenance services: the maximum allowable delay in responding of the detector are 39 seconds.

Important: the detectors must be protected from icing and condensation.

Installation and Function



The relay base can directly be fitted to the ceiling. The detector is plugged into the base and secured by turning clockwise. When mounting it on a wall, a mounting bracket has to be used to make sure the detector is always in a horizontal position.

Order Information

RM 3000+ smoke detector	part no. 040800N
WM 3000+ heat detector (alarm temperature 60 °C)	part no. 040820N
Heat detectors with other alarm temperatures (no approval)	on request

Accessories

Base with relay and evaluation electronics	part no. 040841

Further Accessories

Power packs (450 mA, 800 mA)	see page 07.019.00
Electromagnets for installation on wall/ceiling/floor	see page 07.031.00
Hand switch for manual release of door	see page 07.069.00
Sequence controller and pushing flaps	see page 02.043.00
Automatic and semi-automatic door operators	see page 05.001.00
160 N or 320 N spring rope pulley or counterweight	see page 05.047.00
Hydraulic radial dampers and final dampers	see page 05.049.00

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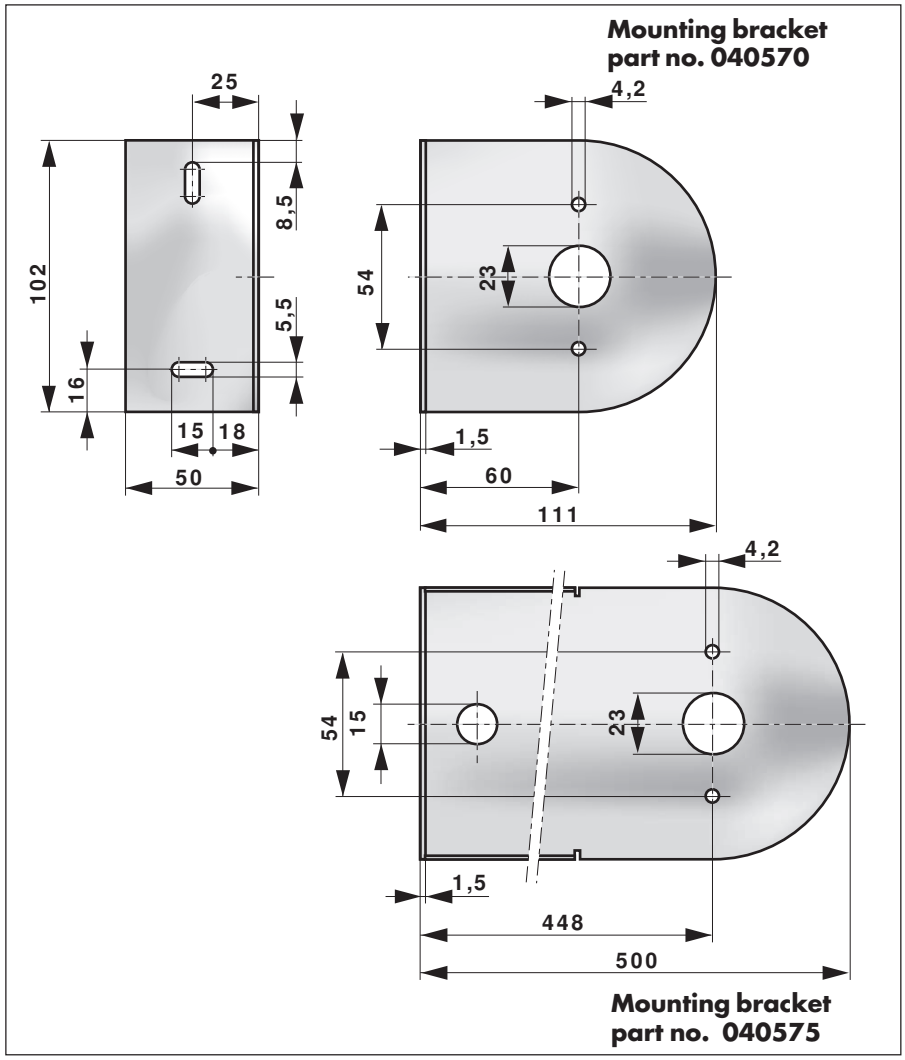
Mounting Bracket for RM 2000, RM 3000+/WM 3000+

The mounting bracket (part no. 040570) allows DICTATOR smoke and heat detectors to be fixed to the wall without difficulty. The fixing holes are suitable for both the RM 2000 and RM 3000+/WM 3000+ range.

In certain cases the German Standard for door hold-open installations allows a smoke detector on the ceiling to be replaced by a detector on the wall. However, these detectors must be installed 500 mm from the wall. This can be achieved with the mounting bracket, part no. 040575. All fixing holes correspond to those of the bracket part no. 040570.

Dimensions



Order Information

Bracket for installation on the wall (RM 2000/RM 3000+)	part no. 040570
Bracket for installation on the wall, length of the arm 500 mm	part no. 040575

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Heat Detector WM 2000

WM 2000 heat detectors are used in hold-open systems for fire-protection doors, except for doors in escape routes where they are not allowed according to the directives of the German Institute of Building and Construction Engineering. The WM 2000 has been tested according to the European standard EN 54 (part 5) and approved by the above mentioned institute for the use in hold-open systems (certificate no. Z-6.5-1903).

The heat detector is equipped with a static alarm signal level at 60 °C. An additional survey mechanism with rate-of-rise performance guarantees a prompt and reliable response to rapidly increasing temperature. This offers significantly higher safety during fast spread of fire.

In case of alarm a potential free relay contact in the heat detector opens and cuts the power supply of connected electromagnets, door closers and door operators etc. The fire protection door closes automatically.

The alarm signal can be passed on through two separate potential free relay contacts. Additionally, a clearly visible red diode on the heat detector indicates the alarm system's operational situation.

Technical Data

Supply voltage	24 VDC (+15 %, -10 %)
Power consumption	approx. 15 mA
Static alarm signal level	60 °C
Current-carrying capacity relay contact	24 V/1.0 A
IP rating	IP 42
Class	A1R

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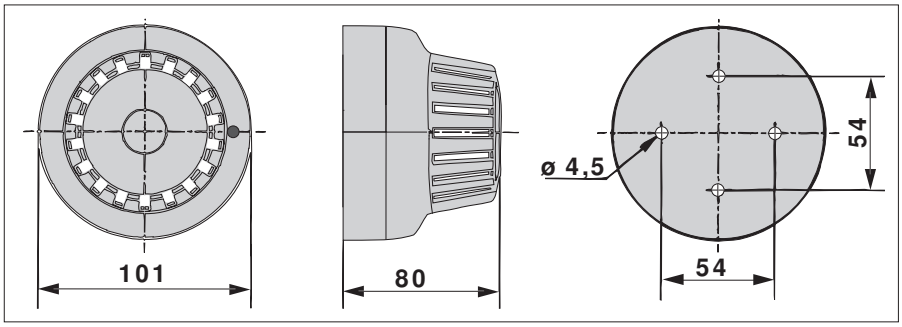
Dimensions



Installation

When using the heat detector on fire protection doors please follow the guide lines for hold-open systems set by the Institute of Building Engineering in Berlin.

The heat detector is **not** equipped with a mains transformer so a direct voltage of 24 V is required at terminals 1 and 6 (see wiring diagram below).

A potential-free relay contact (contact "a") is available at terminals 2 and 3 which opens in event of alarm or power failure. An additional relay contact (contact "b") is provided at terminals 4 and 5.

Contact "a" always opens, but contact "b" can either open or close, depending on the heat detector model.

- Model 040511: "b"opens upon alarm
- Model 040512: "b"closes upon alarm

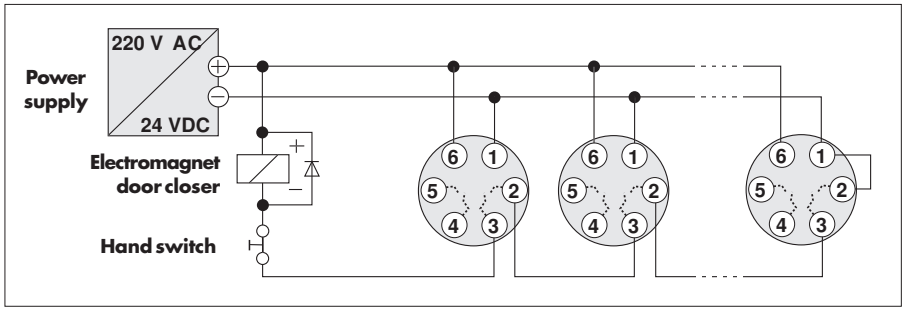
If you require several heat detectors to be wired in series, you need to place bridges at terminals 1 and 2 of the last heat detector (see wiring diagram below).

Insert the heat detector into the socket so that the light diode coincides with the mark in the socket. Then turn it to the right for about 1.5 cm until it snaps in. It is now ready for operation.

The hand switch can be mounted anywhere on the feed line which is connected to the electromagnets or the door closer.

Advice: Protect the heat detector from dust, colour mist and moisture to prevent malfunction.

Connection Example



Order Information

Heat detector WM 2000, contakt "b" opens on alarm	part no. 040511
Heat detector WM 2000, contakt "b" closes on alarm	part no. 040512
Socle for WM 2000 heat detector	part no. 040540

Further Accessories

Bracket for installation on the wall	part no. 040570
Power pack 24 VDC / 450 mA	part no. 040545
Power pack 24 VDC / 800 mA	part no. 040552
Hand release switch	part no. 040005

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Approval for Smoke Detectors RM 2000, RM 3000+ and Signal Control S400

Deutsches Institut für Bautechnik

DIBt

Zulassungsstelle für Bauprodukte und Bauarten
Bautechnisches Prüfamt
Eine vom Bund und den Ländern gemeinsam getragene Anstalt des öffentlichen Rechts
Mitglied der EOTA, der UEAtc und der WFTAO

Bescheid

über die Änderung und Verlängerung der Geltungsdauer der allgemeinen bauaufsichtlichen Zulassung vom 12. November 2010

Datum: 28.11.2011
Geschäftszeichen: II 33-1.6.5-25/11

Zulassungsnummer:
Z-6.5-1903

Geltungsdauer
vom: 1. Dezember 2011
bis: 1. Dezember 2016

Antragsteller:
Dictator Technik GmbH
Gutenbergstraße 9
86356 Neusäß

Zulassungsgegenstand:
Feststellanlage "Dictator RM II" für Feuerschutzabschlüsse

Dieser Bescheid ändert die allgemeine bauaufsichtliche Zulassung und verlängert die Geltungsdauer der allgemeinen bauaufsichtlichen Zulassung Nr. Z-6.5-1903 vom 12. November 2010. Dieser Bescheid umfasst zwei Seiten. Er gilt nur in Verbindung mit der oben genannten allgemeinen bauaufsichtlichen Zulassung und darf nur zusammen mit dieser verwendet werden.

Deutsches Institut für Bautechnik

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3.8 Electrical Installation of the Hold Open System

Exerpt from the General Approval of the Building Authorities (from November 2010)

To prevent any disturbances by short circuit (unintended conductive connection) of the release contacts, there is required a separate wiring to the following devices (system components):

- fire detectors
- hand release switches
- supervising devices which can prevent the release.

In case the trouble-shooting or release of these devices (system components) is realized by lines (e.g. current change, data frames) or the devices (system components) are combined or contained in one casing, or the wiring of these devices is completely conducted in a cable protection tube or cable canal, a separate wiring is not required.

4. Mounting

Excerpt from the Directions for Hold-Open Devices

4.1 Installing Smoke Detectors

4.1.1 Wall Openings

The smoke detector must be installed on the ceiling, above the wall opening. It must be at least 0.5 m horizontally from the wall, and must be no higher than 2.5 m.

The smoke detector should be installed in the area of the ceiling where the highest concentration of smoke would first be expected in the event of fire. Fire protection ceilings are so thick that smoke spreads quickly over the surface, whereas decorative ceilings are generally permeable (see diagram 1).

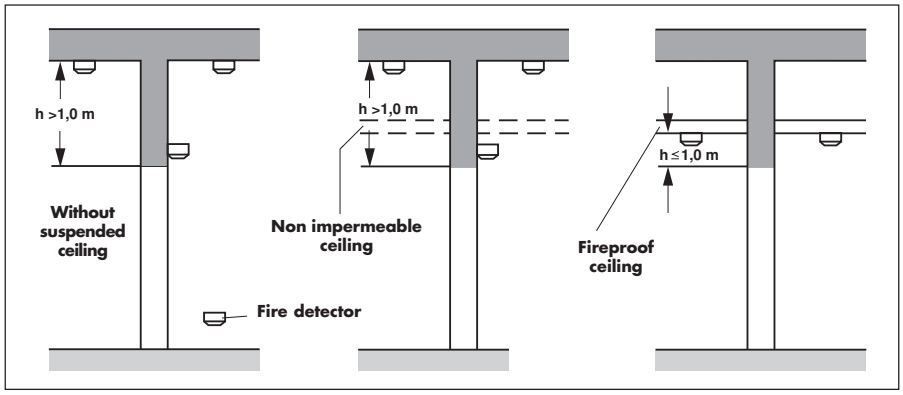


Diagram 1: Heights of lintel

The quantity and model of detectors, as well as the measurements between the ceiling and lintel, depend on the height of the ceiling at the points where the detectors are installed. If a lintel detector is required, it should be installed on the wall above the wall opening, maximum 0.1 m above the lintel.

For the installation it is generally assumed that one detector can cover a range of 2 m to each side. If the opening width exceeds 4 m, additional detectors are required.

Usually one detector is placed on the ceiling in each of the adjoining rooms of the door and a third one directly on the lintel of the opening. However, if the ceiling in both rooms is no more than one metre above the opening, two detectors (one on each ceiling) are sufficient. A single detector on the lintel is sufficient on swing doors with an opening width up to 3 m.

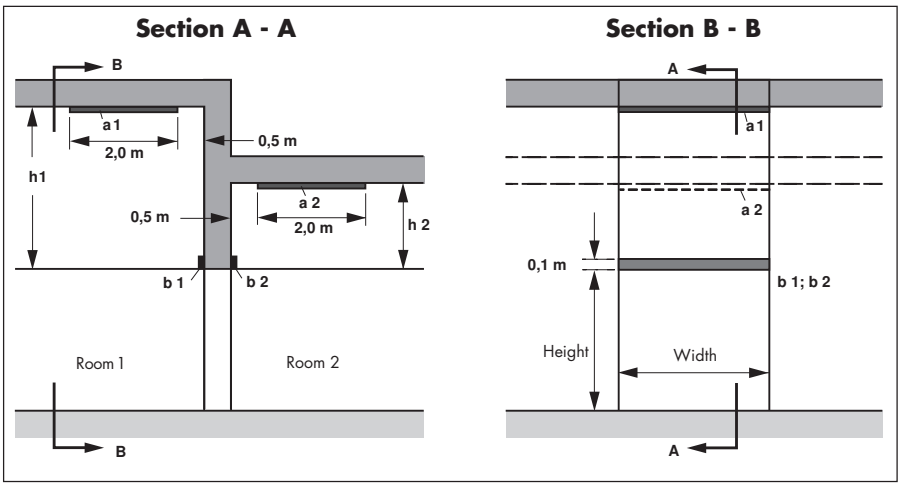


Diagram 2: Installation Instructions according to 4.1.1.

Line	Height of ceiling over opening lintel	Installation points (b = b1 or b2)	Min. number of detectors required*
1	h1 and/or h2 > 1.0 m	a1+ a2 + b	2 ceiling and 1 lintel detectors
2	h1and h2 ≤ 1.0 m	a1+ a2	2 ceiling detectors
3	as line 2, but swing door with door width up to 3.0 m	b	1 lintel detector

* Depending on the door width more detectors may be necessary in lines 1 and 2.

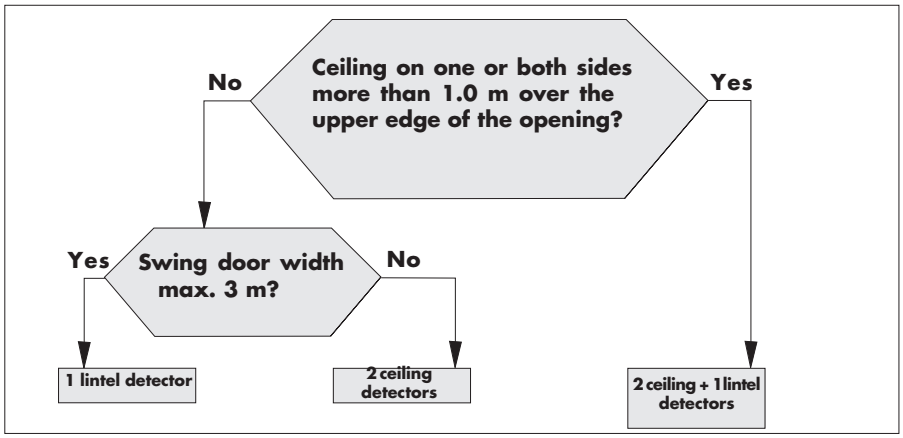


Diagram 3: Decision diagramm for 4.1.1

4.1.1 Replacing Ceiling Detectors by Wall Detectors - cont.

According to regulations (10/1998) ceiling detectors may be replaced by wall detectors in exceptional cases.

Exceptions:

- Distance between ceiling and lintel is more than 5 m.
- Wall detectors are installed at least 3.5 m above the lintel of the wall opening, with brackets at least 0.5 m long.

4.1.2 Ceiling Openings

If floors are joined through ceiling openings, these openings must have ceiling detectors. At least one ceiling detector must be installed on each floor, and they must be no further away from the edge of the ceiling opening than 0.5 m. If the ceiling above the opening is sealed, the detector must be installed vertically in the middle of the ceiling opening.

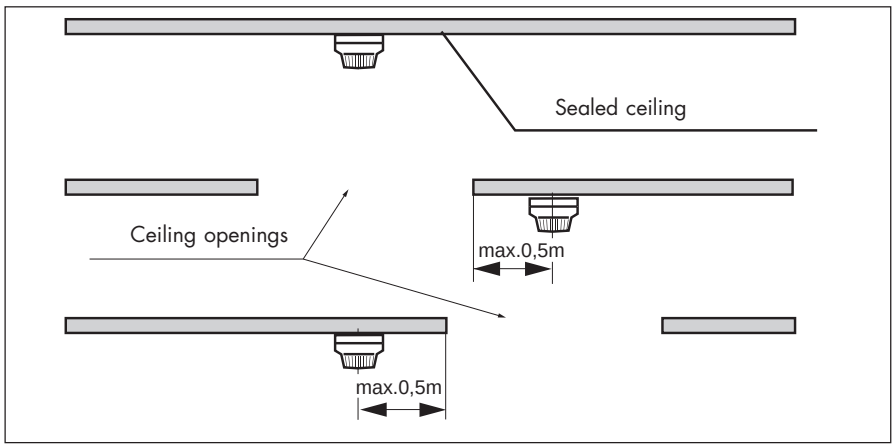


Diagram 4: Installation areas according 4.1.2

If the ceiling opening has a diameter of more than 4 m, additional detectors are required.

4.2 Hand Release

A manual hand release must be provided for every hold-open device. The hand switch must be installed within the immediate vicinity of the door and not be hidden by the door. It must be marked with "close the door".

4.5 Mounting Devices

Mounting devices used for hold-open systems must not interfere with the protection given by the door/gate.

You must not drill through fire protection doors/gates.

Counter plates for electromagnets should be mounted on swing doors in such a way that the screws are no more than 150 mm from the upper, lower, or vertical edge of the closing side. Rivet nuts with M5 oder M6 screws must be used on steel doors.

5. Final Inspection

Once the hold-open system has been installed it is the operator's responsibility to ensure it is tested to make sure it functions correctly. This inspection must only be carried out by the manufacturer of releasing devices and hold-open systems or a specialist.

The inspection must include the following points:

1. The hold-open system equipment must be authorised.
2. The reference numbers on the equipment must be authorised numbers.
3. All equipment must operate safely, as stated in the regulations. It must be possible to release the system by hand, or by simulating the detectors according to the type of fire.
4. It must be checked whether the system still closes automatically should it not be operating (e.g through lack of power or missing detector).

Once the inspection has been successful a 105 mm x 52 mm sign available from the hold-open system manufacturer must be displayed on the wall within the immediate vicinity of the system, with the following inscription:

Hold-Open System
Authorised by....
(Company, month and year of inspection)

6. Periodic Inspection

The hold-open system must be tested by the operator on a monthly basis. In addition an annual maintenance service is required, which must only be carried out by a competent person.

Records of these monthly checks and annual maintenance must be kept by the operator (please see example below).

Monthly Inspection					
Date	Name	Date	Name	Date	Name

Annual Inspection					
Date	Name	Date	Name	Date	Name

Power Packs

The DICTATOR power packs change an input voltage of 230 VAC into an electronically stabilised direct voltage of 24 VDC. This direct voltage is independent of the oscillations from the mains voltage. A green light just above the label indicates whether the power pack is working properly.

An integrated protective system protects the power pack in the event of a short circuit on the low-tension side.

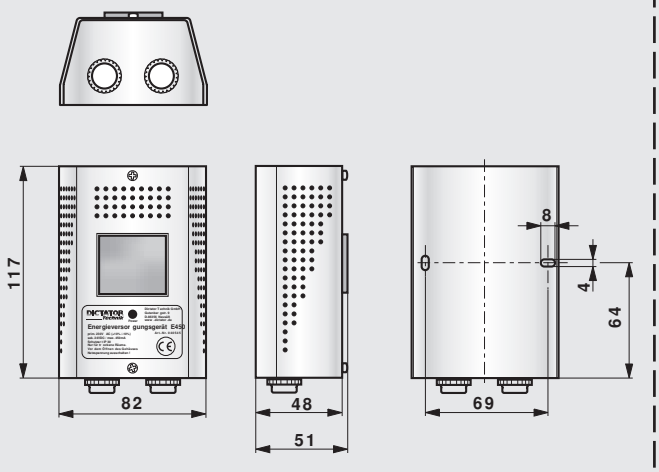
DICTATOR power packs are available with two different capacities: 450 mA or 800 mA.

They have been tested and approved for the use on hold-open systems (approval no. Z-6.5-1903). The production quality of the power packs is surveyed by an accredited testing institute.

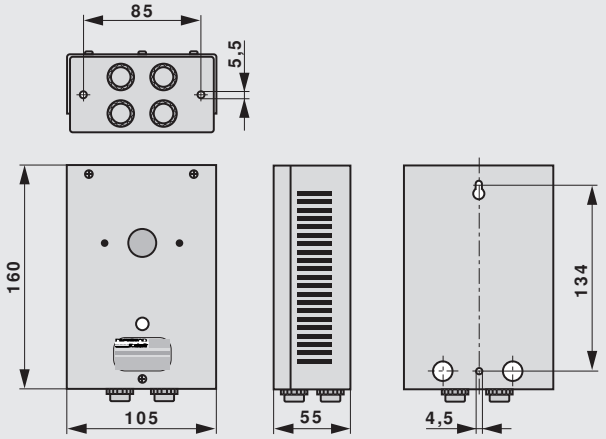
Technical Data

	040545	040552
Input voltage	230 VAC (+10 %, -10 %) / 50 Hz	
Power consumption max.	0.1 A	0.2 A
Output voltage	24 VDC (+10 %, -10 %)	
Output current max.	450 mA	800 mA
Operating temperature	-10° to +40 °C	
Weight	0.75 kg	1.2 kg
IP rating (according to DIN 40050)	IP 30	IP 20
	Only for dry rooms!	
Protection class	I	
Casing	stainless steel	white laquered sheet steel

Dimensions



Power pack 040545



Power pack 040552

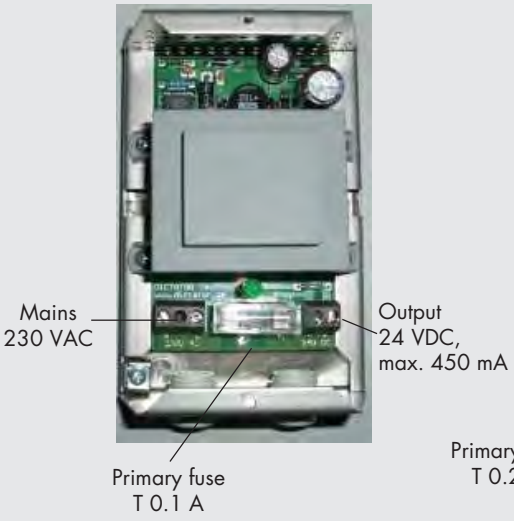
Installation

The power packs are only suitable for dry rooms. During service the power pack heats up. Therefore take care that air can penetrate the casing through the ventilation slots (e.g. do not mount the pack in a corner).

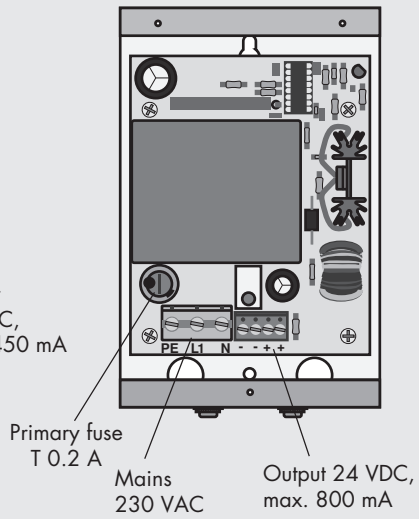
The connection to the 230 V mains and the commissioning and maintenance must be carried out by an accredited person.

Interior

Make sure the earthed conductor is connected properly. Otherwise danger to life by electric shock!



Power pack 040545



Power pack 040552

Order Information

Power pack 24 VDC/450 mA	part no. 040545
Power pack 24 VDC/800 mA	part no. 040552

S400 Signal Control

according to EN 14600:2005, point 4.9.2.1

The S400 signal control complies with the requirements of the EN 14600:2005, point 4.9.2.1. This norm requires the triggering of acoustic and optical warning signals during the closing of a fire protection door - even in case of power failure.

The S400 signal control disposes of an integrated power pack that changes the mains power of 230 VAC into 24 VDC to power hold-open devices and smoke detectors. In addition a battery back-up is integrated which serves only to power the acoustic and optical signallers. At a maximum two hazard warning flashers and one siren can be connected (for type please see following page).

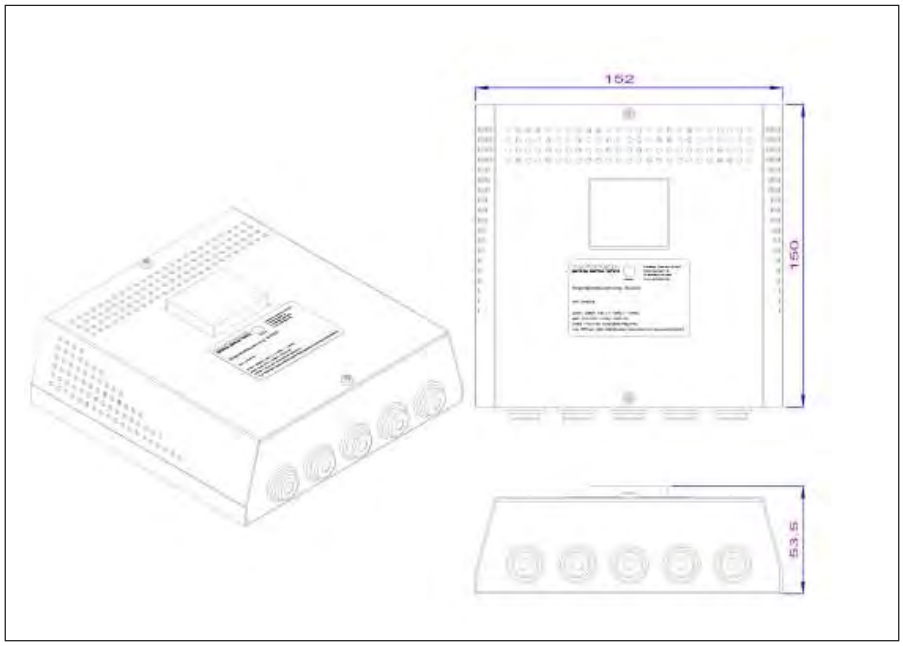
The signallers are triggered the moment the hold-open system's power is cut and the door starts to close. By an integrated time control unit the signallers are switched off after an adjustable time.

Existing installations can be upgraded with the signal control.

Technical Data

Input voltage	230 VAC (+10 %, -10 %) / 50 Hz
Power consumption	maximum 0.1 A
Output voltage for hold-open system	24 VDC, max. 400 mA
Battery back-up for signallers	20 VDC, max. 32 mA, max. 100 sec.
Operating temperature	-10° to +40 °C
IP rating (according to DIN 40050)	IP 30 / only for dry rooms
Protection class	I
Casing	stainless steel
Time relay for switching off signallers	adjustable 1 - 99 seconds/deactivatable

Dimensions S400 Signal Control



Signaller

The only signaller tested and approved together with the S400 signal control is the signaller, part no. 700171. So you may use just this hazard warning flasher with integrated siren.

In case you use two units on one door, in one signaller the siren has to be deactivated.

Technical Data Signaller

Input voltage	24 VDC
Power consumption	26 mA with activated siren
	6 mA with deactivated siren
Loudness	approx. 100 dBA, reducible by
	integrated potentiometer
Flashing frequency	1 Hz
Colour	red
IP rating	IP 65
Dimensions D x H	97.5 x 104 mm

Order Information

S400 signal control	part no. 700162
Signaller for S400 with red flashing light and siren, IP 65	part no. 700171

DICTATOR Hold-Open Systems for Hazardous Areas

Products to be used in hazardous areas obviously have to meet special requirements. In July 2003 the new European directive 94/9/EG (ATEX 100) has come into force making regulations more rigorous than before.

DICTATOR furnishes a hold-open system especially for hazardous areas that meets the requirements of the ATEX 100. The hold-open system has been tested and is approved by the Institute for Building Engineering in Berlin for the use on fire protection doors (approval no. Z-6.5-1646).

There are two types available:

- hold-open system without door operator
- hold-open system combined with a door operator for opening the door.

The central unit is installed outside the hazardous area.

The valid regulations and instructions must strictly be observed. The installation of the components and operating elements must assure that they cannot be damaged.

Technical Data

Use	hazardous areas
	zones 1 and 2
Operating temperature	0 °C to +40 °C
Type of protection fire detector	Ex II 1G Ex ia II C T5 (at max. 40 °C)
	only in combination with a safety barrier
Type of protection electromagnets	Ex II 2G EEx m II T6 or
	Ex II 2G EEx em II T6

Components of a Hold-Open System without Door Operator

Fire protection doors, that are not kept closed all the time require a hold-open system. The smallest unit of such a hold-open system consists of a fire detector, a power supply, an electromagnet and a hand release switch. In case of fire or gas alarm the power supply to the electromagnet is interrupted, the door is set free and automatically closed by the built-in spring, a door closer or a counterweight. In case of hold-open systems in hazardous areas, according to German regulations, an additional gas warning system with a NC-contact is required to release the hold-open system as well. If the switching capacity of the potential-free contact of the gas alarm is not sufficient, an additional relay might be used that is fed by the power supply of the hold-open system.

Components

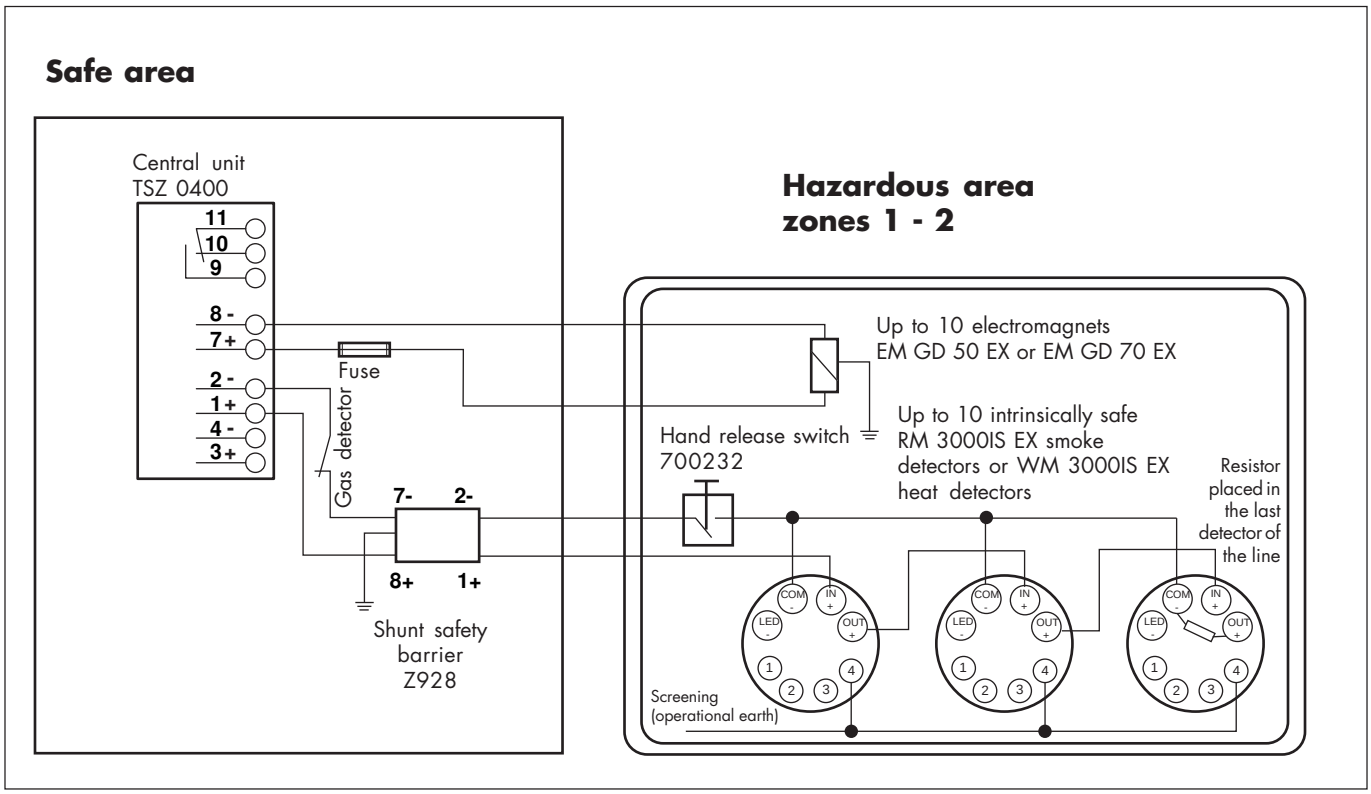
The explosion-proof hold-open system is made up of maximum 10 smoke or heat detectors and up to 10 explosion-proof magnets. The explosion-proof magnet is available in 2 different forces and 2 different designs (with connection box or just with a 2 m ex-proof cable).

The TSZ 0400 central and the safety barrier (Zenerbarriere) are installed outside the hazardous area.

For the explosion-proof DICTATOR hold-open system with the following components a hazard analysis of the TÜV Süd (South) is existent. The cable recommended for the wiring within the hazardous area is an Ölflex cable 2x0,75 mm², max. length 100 m.

- TSZ 0400 central unit with power supply
- Shunt safety barrier: Zenerbarriere Z928
- RM 3000IS EX smoke detector (or WM 3000IS EX heat detector) with base
- Resistor 5.6 kΩ (to be placed in the last detector of the line)
- Explosion-proof magnet
- Hand release switch (part no. 700232)
- Gas warning system

Wiring Diagram



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Components of a Hold-Open System with Door Operator

In order to open a fire protection door automatically an approved, explosion-proof door operator can be used. The magnets of explosion-proof hold-open systems are generally installed only in the OPEN position of the door and are not integrated in the door operator. In case of alarm, the AR 20 cutoff relay completely cuts off the door operator to make sure that the door does not stay open, even in case of an error of the control system. The door is closed mechanically.

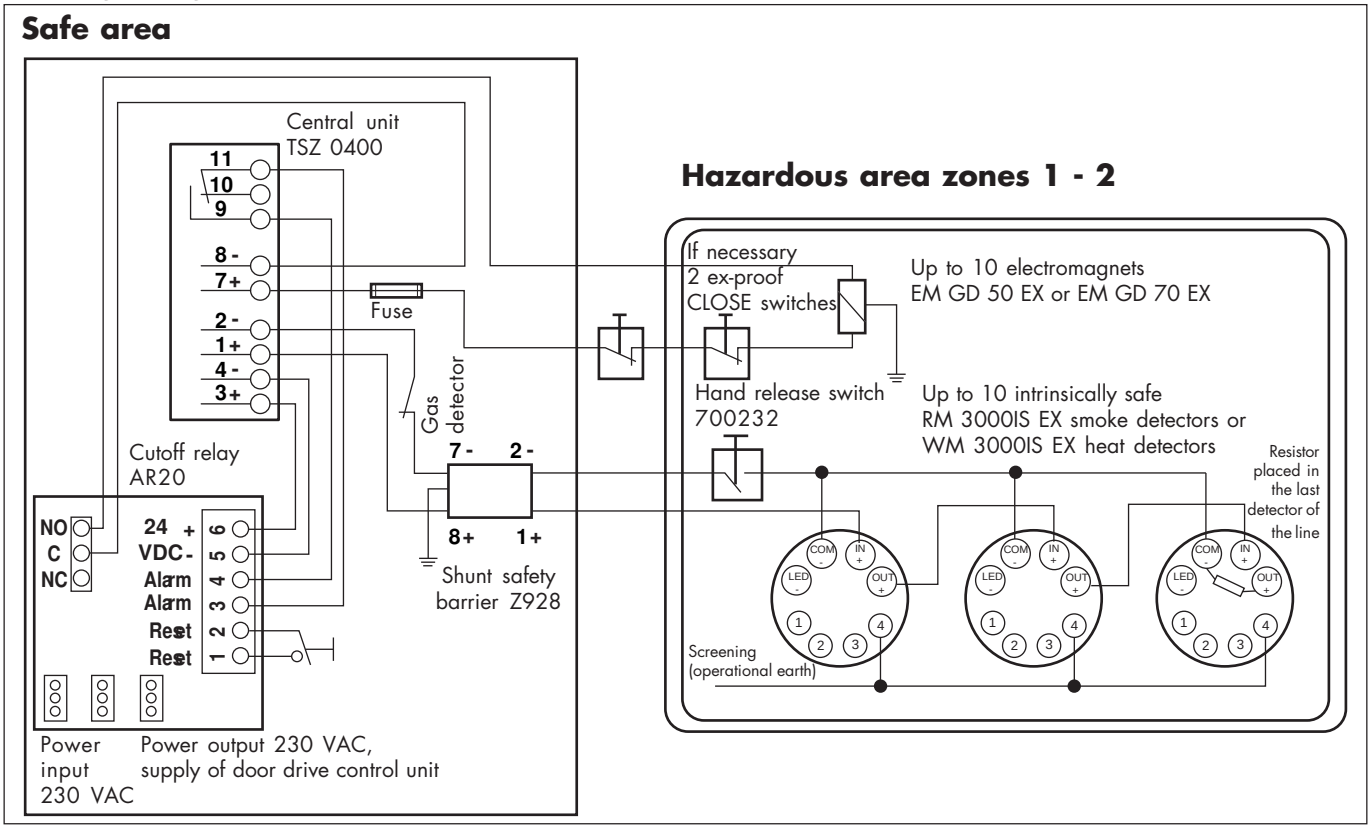
Components

The door operator used to open the fire protection door is not shown in the list of the components. Which door drive should be chosen depends on the type of door, the required forces, functions etc. Information on our explosion-proof door operators are to be found in the two chapters about door operators in our catalogue. The TSZ 0400 central unit, the shunt safety barrier and the AR 20 shut-off relay are installed outside the hazardous area.

For the explosion-proof DICTATOR hold-open system with the following components a hazard analysis of the TÜV Süd (South) is existent. The cable recommended for the wiring within the hazardous area is an Ölflex cable 2x0,75 mm², max. length 100 m.

- TSZ 0400 central unit with power supply
- Shunt safety barrier: Zenerbarriere Z928
- AR20 cutoff relay (completely cutting off the door operator control system in case of alarm)
- RESET switch
- RM 3000IS EX smoke detector (or WM 3000IS EX heat detector) with base
- Resistor 5.6 kΩ (to be placed in the last detector of the line)
- Explosion-proof magnet
- Hand release switch (part no. 700232)
- Gas warning system (to be provided by the customer)

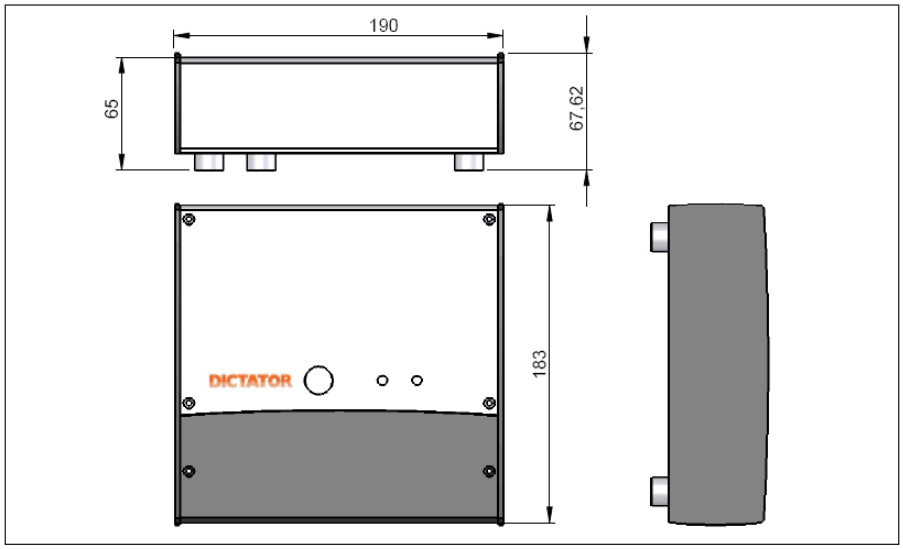
Wiring Diagram



TSZ 0400 Central Unit with Power Supply

Functions of the TSZ 0400 central unit:
- Power supply of the connected smoke detectors and electromagnets
- Control and evaluation of the smoke detectors: in case of alarm or errors the integrated relay contact interrupts the power supply to the magnet and the door closes
- RESET: after each alarm the connected smoke detectors must be reactivated. This is done either with the RESET switch on the front panel of the central unit or with a separate RESET-switch (obligatory in combination with the AR20 shut-off relay).
- Power supply of further consumers such as a warning siren or flash light
- Additional potential-free contact

Dimensions



Installation

The TSZ 0400 central unit must be installed outside the hazardous area.

Technical Data

• Supply voltage	230 VAC ± 15 %, 50 Hz
• Power consumption (without load)	about 50 mA
• Relay contact for hold-open system	max. 30 VDC at 1 A
• Additional contact*	change over contact, max. 30 VDC at 1 A
• Output voltage	24 VDC
• Output current max.	0.8 A
• Operating temperature	0 °C to 40 °C
• IP rating	IP 42
• Material, colour of the casing	plastic casing, RAL 9002
• LEDs on the front panel	LED green "working" (ON) (normal operation)
	LED red "alarm" (error or alarm)
• "Rückstelltaste" Switch on the front panel	hand release and RESET of the detectors

Up to 3 central units can be inter-connected using the integrated terminals. If one of the detectors connected to one central unit is released, this central unit switches the other connected central units to alarm.
** Not available when an AR 20 cutoff relay is connected.*

Order Information

TSZ 0400 central unit with power supply	part no. 040580

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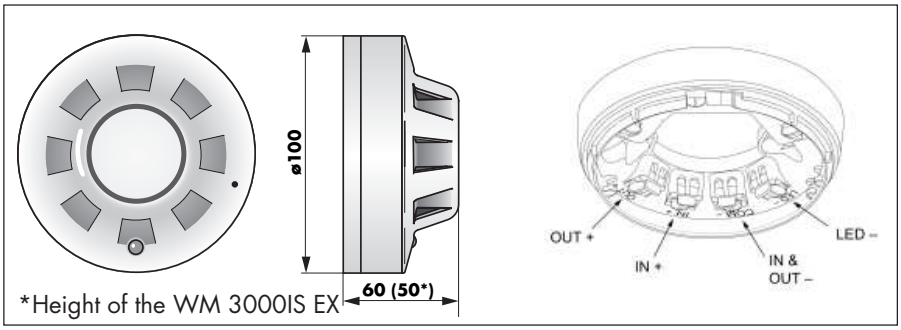
Smoke and Heat Detectors
RM 3000IS EX / WM 3000IS EX

Fire protection components installed in hazardous areas require in addition to the approval for fire protection a test and certificate confirming their compliance with the EN 94/9/EG (ATEX 100) standard. Both the smoke and heat detector RM 3000IS EX and WM 3000IS EX meet these requirements.

The smoke detector RM 3000IS EX is a stray light detector with integrated thermo sensor.

The smoke and heat detectors RM 3000IS EX and WM 3000IS EX are intrinsically safe. In hazardous areas they may only be used in combination with the shunt safety barrier described on the next page.

Dimensions



*Height of the WM 3000IS EX

Installation

The wiring is done in the base S 3000IS EX. In the last detector the 5.6 kΩ resistor has to be installed between the clamps Com- and Out+.

Intrinsically safe circuits (components marked light-blue) may enter hazardous areas - depending on the type of protection required. However, it has to be assured that each intrinsically safe circuit is safely separated from any not intrinsically safe circuit. The requirements of the EN 60079-14 standard have to be observed. In Germany additionally applies the "National Preamble" of the DIN EN 60079-14/VDE 0165 part 1.

On demand an additional parallel display can be connected to the RM/WM 3000IS EX smoke/heat detectors to faster locate the triggered detector or the seat of fire in case of alarm.

Technical Data

• Supply voltage	14 to 28 VDC
• Average quiescent current	85 µA at 24 VDC
• Starting current	105 µA at 24 VDC
• Alarm load	325 Ω in series with 1.0 V descent
• Operating temperature	-40 °C to +60 °C (class T4)
	-40 °C to +40 °C (class T5)
	(Protect against condensation and icing!)
• Heat detector	rate-of-rise detector
Reaction point class acc. EN 54-5:2000	AR1, max. room temperature 50 °C
• Ignition protection type	Ex II 1G EEx ia IIC T5 (at max. 40 °C)
• IP rating	IP 23
• Indication of alarm	red LED indicator on the detector
• Material / colour of the casing	polycarbone / white

Order Information

Smoke detector RM 3000IS EX with S 3000IS EX base	part no. 040881SET
Heat detector WM 3000IS EX with S 3000IS EX base	part no. 040886SET
Resistor 5.6 kΩ	part no. 040891

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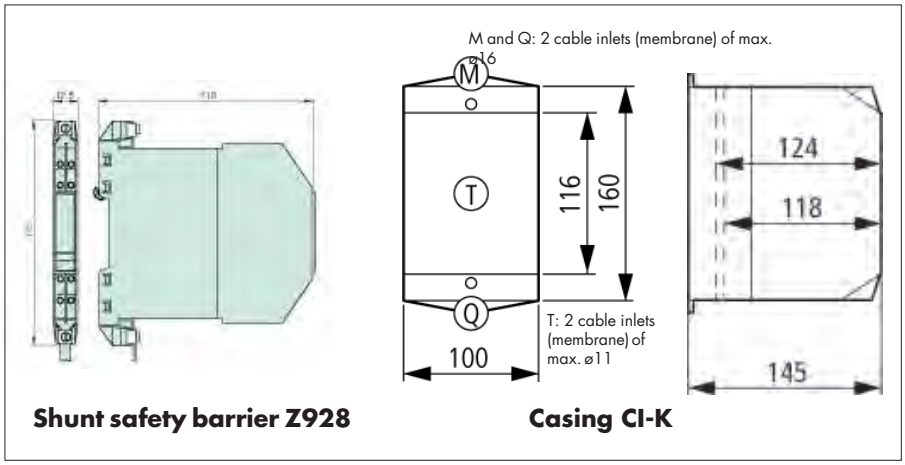
Safety Barrier: Zenerbarriere Z928

A shunt safety barrier, the Z928, must be placed in between the TSZ 0400 central unit and the intrinsically safe smoke detectors installed in the hazardous area. It restricts the transfer of energy from safe area equipment to the intrinsically safe smoke detectors, by the limitation of voltage and current.

The shunt safety barrier Z928 has been tested and is certified according to the requirements of the 94/9/EG (ATEX 100) standard (approval no. BAS01ATEX7005).

Dimensions



Shunt safety barrier Z928 **Casing CI-K**

Functioning

The shunt safety barrier integrates several diodes. If the voltage in the safe area exceeds the maximum voltage admissible for these diodes, they start to conduct current and blow the fuse of the safety barrier. This way the transfer of too high energies to the hazardous area is prevented.

The safety barrier has to be installed outside the hazardous area.

If on site no suitable casing (with a top hat rail according to EN 50222) is available, we offer a separate casing with protection IP 65. The barrier is simply snapped onto the top hat rail in the casing.

Technical Data

• Supply voltage	max. 28 VDC
• Nominal power	max. 93 mA
• Integrated resistor	min. 300 Ohm
• EEx ia detectors to be connected	max. 10 units
• IP rating	IP 20 / casing IP 65
• Operating temperature	0 °C to +60 °C
• Material casing	glassfiber reinforced polycarbonate
• Colour of the casing	bottom black RAL 9005, upper part grey RAL 7035

Order Information

Shunt safety barrier Z928	part no. 040584
CI-K casing for the safety barrier	part no. 040585

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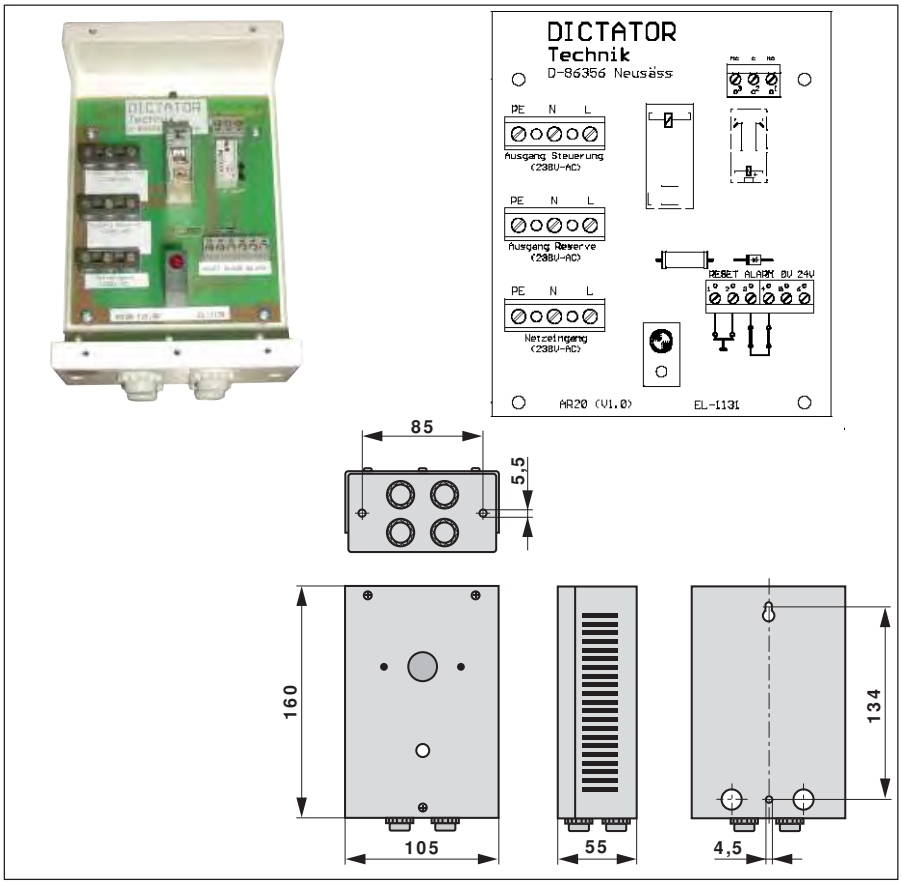
AR 20 Cutoff Relay

The AR20 cutoff relay is required as a component in explosion proof hold-open systems when a door operator is used to open the door. In case of an alarm it cuts off completely the power supply to the control system of the door operator and the door is closed mechanically (door closer, closing spring or counterweight).
After each alarm the shut-off relay has to be reactivated with a separate RESET switch.
The AR 20 cutoff relay has to be installed outside the hazardous area.

Interior View
Dimensions



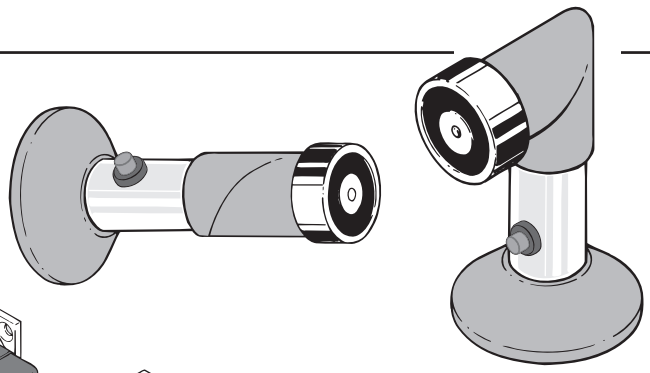
Technical Data

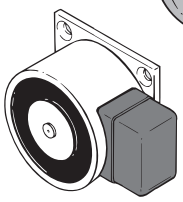
• Control voltage	24 VDC ± 10 %
• Power comsumption	max. 40 mA
• Switching capacity	max. 3 A at 250 VAC
• Max. switchable motor power	0.37 kW
• Operating temperature	0 °C to 40 °C
• IP rating	IP 20
• Material, colour of the casing	sheet steel casing, RAL 9010
• Cable inlets of the casing	4 x Pg 9
• Indicator diode on the casing	LED red = triggered (error or alarm)

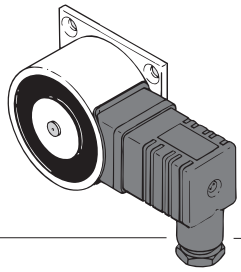
Order Information

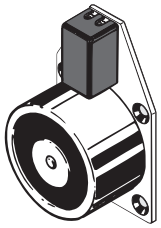
Cutoff relay AR 20	part no. 040582
RESET switch to reactivate the cutoff relay	part no. 700112

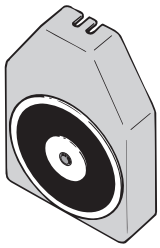
Electromagnets - Summary

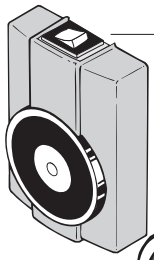


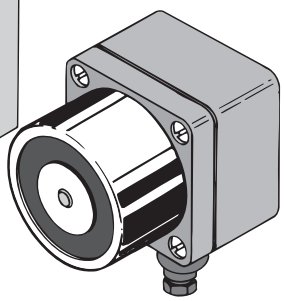


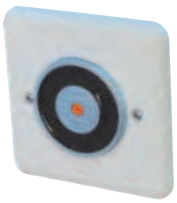


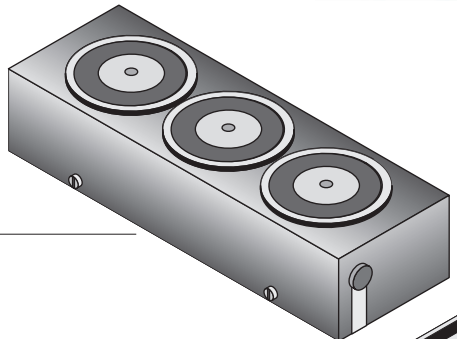


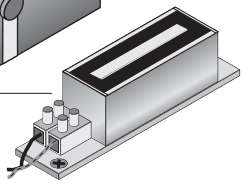












DICTATOR Electromagnets

Uses

DICTATOR electromagnets are used in a variety of applications. One of the most important fields is fire protection and prevention. The electromagnets are used to keep fire protection doors open. Usually fire protection doors must always remain closed. However, this is not always possible due to organisational or practical reasons. Using an electromagnet to keep the door open is the perfect solution. In the event of fire the smoke detector, for example, automatically interrupts the power supply to the magnet, thus making sure the door closes. Electromagnets are also used on smoke vents and windows. These windows should normally be closed, and in the event of fire must open automatically. This is no problem for a DICTATOR electromagnet.

Bar magnets with very high holding forces are mainly used for **security applications**, such as the securing of emergency exits in escape routes.

Electromagnets are also used in **machine construction**. For example in machining centers, access doors or flaps must be closed before the machine is allowed to start. This requires information to be transferred from the door to the control system. DICTATOR electromagnets with feed-back contact provide the solution.

The versatility of DICTATOR electromagnets makes them the perfect solution for **many different applications**. However, on the following pages we will concentrate on our standard program for fire protection doors. If you have an application that cannot be solved with our standard models, please contact us.

Variations

DICTATOR electromagnets are produced in a variety of designs to enable us to offer solutions for special applications. Within our standard programme, the following technical data can be varied:

Voltage	12 VDC to 230 VDC, 24 VAC to 250 VAC
Force	70 N to 5000 N
IP rating	from IP 20 to IP 66
Electrical connection	terminal, free leads etc.
Design	casing, distance tube, flush mounting etc.

The most important features of DICTATOR electromagnets include lowest possible power comsumption and highest possible force. We have also attached great importance to a wide range of different models, offering optimal solutions for many different application and installation requirements.

Customised Designs

Apart from the variation possibilities described above, we also offer customised designs e.g. the **electromagnets with a permanent magnet**. They usually work without current due to the permanent magnet. By feeding current to the magnet, the magnetism of the permanent magnet is momentarily neutralised, thus releasing the door or flap.

Please inform us of your application. We look forward to providing a solution for you.

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Electromagnet with Swivel Head

For Installation on the Floor, Wall or Ceiling

DICTATOR electromagnets are used in combination with smoke detectors to keep fire protection doors open.

The electromagnet with swivel head has a distance tube which is welded vertically onto a mounting plate.

The magnet is supplied with its head in a straight position. To mount on the floor or ceiling the head position can be altered without having to interfere with any electrical connections (see diagram on the right).

The tube is available in three different lengths. It can also be shortened to the required length if necessary.

The mounting plate and tube are made of grey laquered steel and the magnet is zinc plated steel. The other parts are made of light grey plastics (RAL 7037). An interrupter key is integrated in the lower part of the tube.

DICTATOR magnets are equipped with spark extinction diodes. In the event of faulty connection, the integrated polarity protection prevents the spark extinction diode from being destroyed.

The GD 60 electromagnet has been tested according to EN 1155:2003 and together with the DICTATOR smoke detectors RM 2000 and RM 3000+ been approved by the German building supervision (approval no. Z-6.5-1903).

Technical Data

Electromagnet	EM GD 60	EM GD 60 S
Voltage	24 VDC ±10 %	24 VDC ±10 %
Power consumption	67 mA (1.6 W)	79 mA (1.9 W)
Duty cycle	100 %	100 %
Operating temperature	-20 °C to +60 °C	-20 °C to +60 °C
Force	700 N	1000 N
Remanence / IP rating	0 N / IP 40	0 N / IP 40
Finish	zinc-plated / powder coated RAL 9010	

Installation

You can either fix the electromagnet with swivel head to the floor, ceiling or wall. If you want to change the position of the head you need to loosen the locking screw and turn the head by 90°.

If you need to cut the distance tube, remove the head after loosening both grub screws which fix the head to the tube. Then pull out the wires connected to the interruption key.

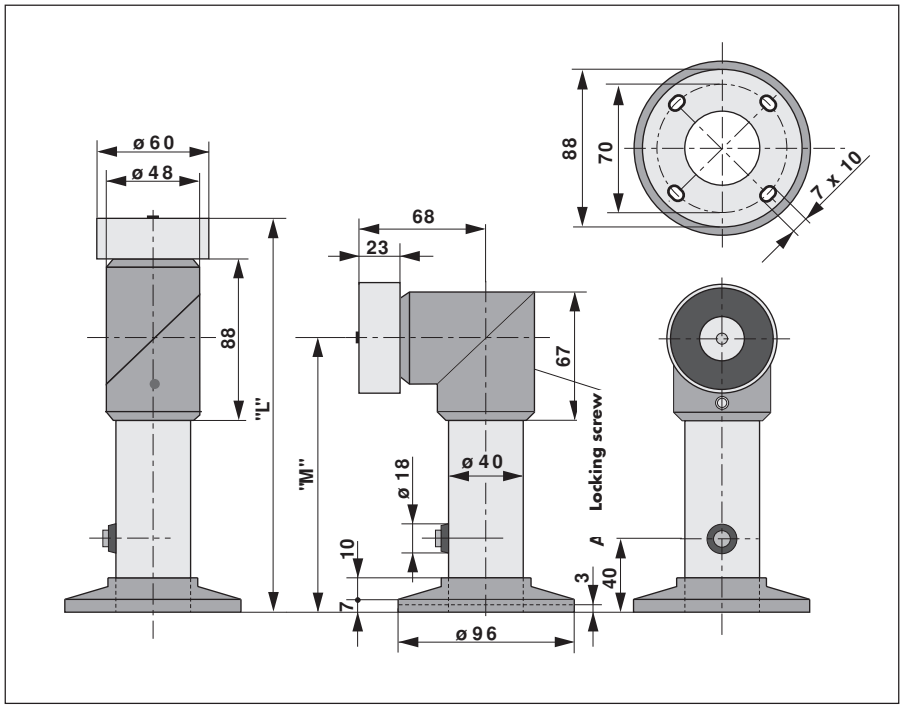
An anchorplate needs to be fixed to the door as a counterpart to the magnet. A choice of different counter plates can be found later in this section.

The connection wires are inserted through an opening in the mounting plate. After the magnet has been properly mounted and wired, both plastic covers are pushed from the side over the mounting plate and clipped into position.

Please note:

It must be possible to release a fire protection door held open by an electromagnet with a hand switch which is not hidden by the opened door. (DICTATOR hand switch part no. 040005, see diagram on the left).

Dimensions



Order Information

Model	Length "L"	Height "M"	
EM GD 60 S 175 magnet	175 mm	107 mm	part no. 040111
EM GD 60 S 175 S magnet	175 mm	107 mm	part no. 040164
EM GD 60 S 325 magnet	325 mm	257 mm	part no. 040112
EM GD 60 S 475 magnet	475 mm	407 mm	part no. 040113

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Electromagnet for Installing on the Wall

with Plastic Base and Interrupter Key

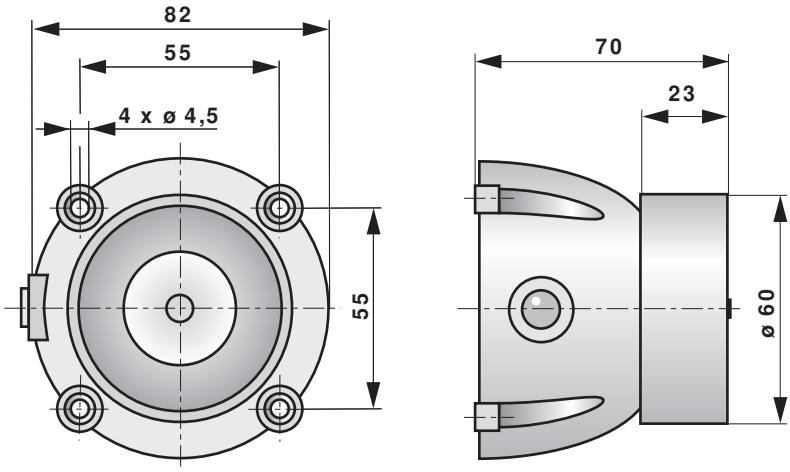
The electromagnet with the plastic base is an aesthetical unit. It permits to compensate for larger distances between door and wall as with a normal electromagnet, without using a distance tube. The electromagnet is furnished both with and without interrupter key in the plastic base.

Fix the magnet to the wall and the anchor plate to the door. A selection of counter plates can be found later in this section.

The connection wires are inserted through an opening at the bottom of the base plate.

Please note: It must be possible to release a fire protection door held open by an electromagnet with a hand switch which is not hidden by the opened door. (DICTATOR hand switch part no. 040005).

Dimensions



EM GD 60 K70 electromagnet with interrupter key Part no. 040223

Order Information

EM GD 60 K 70 electromagnet	force 700 N	part no. 040223
EM GD 60 K 70 without interrupter key	force 700 N	part no. 040224

Notes

Electromagnets with Connection Terminal

Models R, RI, F

DICTATOR electromagnets are used in hold-open systems to keep fire protection doors open.

Electromagnets of the ranges R, RI and F include magnets with diameters of 40, 50, 60 and 70 mm. They differ in force, design and size. They are provided with a connection terminal to allow for an easy installation.

The magnets and the mounting plates are made of steel and are zinc-plated.

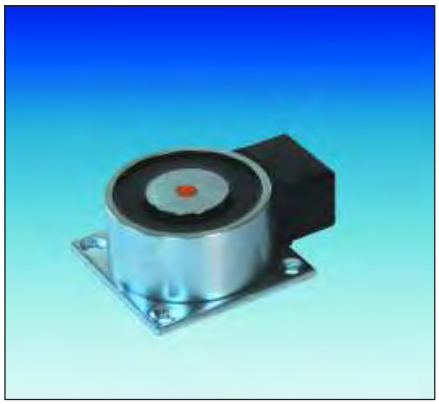
DICTATOR magnets are equipped with a spark extinction diode. In the event of faulty connection, the integrated polarity protection prevents the spark extinction diode being destroyed.

A special version of the electromagnet with connection terminal is furnished also for the use with both 24 VDC and 24 VAC (ø 42 mm).

These electromagnets have been tested according to the EN 1155:2003 and in combination with DICTATOR smoke detectors RM 2000 and RM 3000+ are approved by the German building supervision (approval no. Z-6.5-1903).

Technical Data

Voltage, standard configuration	24 VDC ± 10 %
Voltages, special configurations	24 VAC ± 10 % , 230 VAC, 230 VDC
Power consumption	67 mA to 142 mA
Duty cycle	100 %
Operating temperature	-20 °C to +60 °C
Holding force	300 N to 2000 N
Remanence	0 N
Surface magnet, mounting plate	zinc-plated

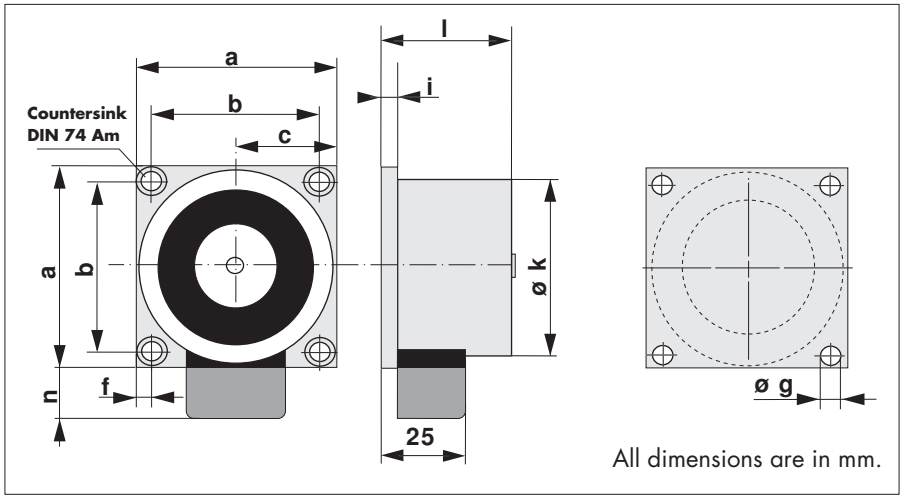


Electromagnets with Connection Terminal
Model R

The electromagnets of the R range are connected in the connection terminal fixed laterally to the magnet.

The R electromagnet with a diameter of 42 mm is available for the use with both 24 VDC and 24 VAC.

Dimensions



	a	b	c	f	g	i	k	l	n
EM GD 50 R 26	55	44	27.5	5.5	ø 4.5	3	ø 50	26	18
EM GD 60 R 26	65	55	32.5	5	ø 4.5	3	ø 60	26	18
EM GD 70 R 39	75	60	37.5	7.5	ø 5.5	4	ø 70	39	18

Technical Data

Electromagnet EM	Voltage	Power consumption	Holding force
GD 50 R 26	24 VDC ±10%	67 mA (= 1.6 W)	600 N
GD 60 R 26	24 VDC ±10%	67 mA (= 1.6 W)	700 N
GD 60 R 26 S	24 VDC ±10%	79 mA (= 1.9 W)	1000 N
GD 70 R 39	24 VDC ±10%	71 mA (= 1.7 W)	1450 N
GD 70 R 39 S	24 VDC ±10%	142 mA (= 3.4 W)	1700 N
GD 70 R 39 R	24 VDC ±10%	142 mA (= 3.4 W)	2000 N

Order Information

EM GD 50 R 26 electromagnet	force 600 N	part no. 040021
EM GD 60 R 26 electromagnet	force 700 N	part no. 040133
EM GD 60 R 26 S electromagnet	force 1000 N	part no. 040134
EM GD 70 R 39 electromagnet	force 1450 N	part no. 040023
EM GD 70 R 39 S electromagnet	force 1700 N	part no. 040117
EM GD 70 R 39 R electromagnet	force 2000 N	part no. 040118
EM GD 42 R 33, 24 VDC/AC	force 500 N	part no. 040267

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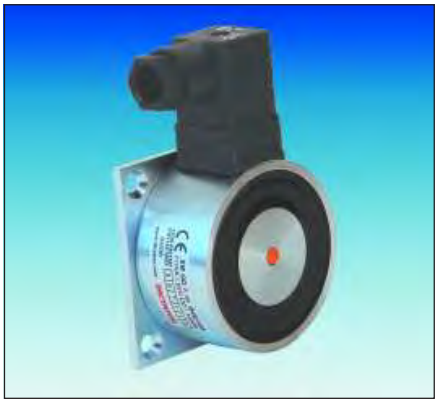


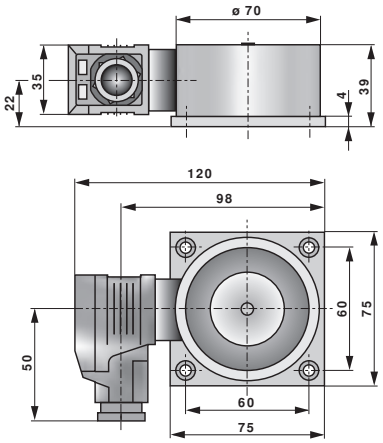
Electromagnets with Connection Terminal

Model RI with Connection Terminal IP 65

The electromagnets of the RI range are connected in the waterproof plastic connection terminal. The EM GD 70 is also available with a Pg 13.5 inlet, especially for the use on **ships** with a larger cable diameter. In case the magnets are exposed to the **sun**, they are available with an UV resistant sealing compound.

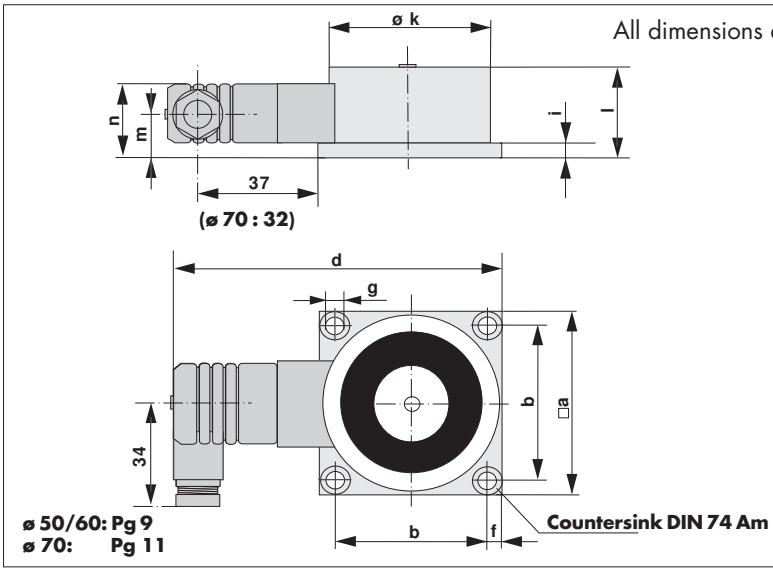
The electromagnets EM GD 50 and 60 are designed to be used with both 24 VDC and 24 VAC.

Dimensions



Model for connection cables up to ø 14 mm, e.g. on ships

All dimensions are in mm.



Type	a	b	d	f	g	i	k	l	m	n
EM GD 50 R 26 I	55	44	100	5.5	Ø 4.5	3	Ø 50	26	14	25
EM GD 60 R 26 I	65	55	110	5	Ø 4.5	3	Ø 60	26	14	25
EM GD 70 R 39 I	75	60	118	7.5	Ø 5.5	4	Ø 70	39	20	35

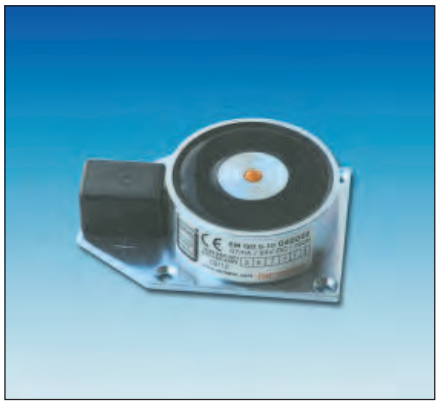
Technical Data

Electromagnet EM	GD 50 R 26 I	GD 60 R 26 I	GD 60 R 26 IS	GD 70 R 39 I
Voltage	24 VDC/AC ±10 %			24 VDC ±10%
Power consumption	67 mA (1.6 W)	67 mA (1.6 W)	79 mA (1.9 W)	71 mA (1.7 W)
Holding force	600 N	700 N	1000 N	1450 N

Order Information

EM GD 50 R 26 I, 24 VDC/AC	600 N	part no. 040107
EM GD 60 R 26 I, 24 VDC/AC	700 N	part no. 040131
EM GD 60 R 26 IS, 24 VDC/AC	1000 N	part no. 040132
EM GD 60 R26 IS, 24 VDC/AC **UV***	1000 N	part no. 041014
EM GD 70 R 39 I, 24 VDC	1450 N	part no. 040108
EM GD 70 R 39 I, 230 VDC	1450 N	part no. 040208
EM GD 70 R 39 I, 230 VAC	1450 N	part no. 040259
EM GD 70 R 39 I, PG 13.5, 24 VDC	1450 N	part no. 040222

***The UV resistant sealing compound contains silikone!**
(Colour: grey)



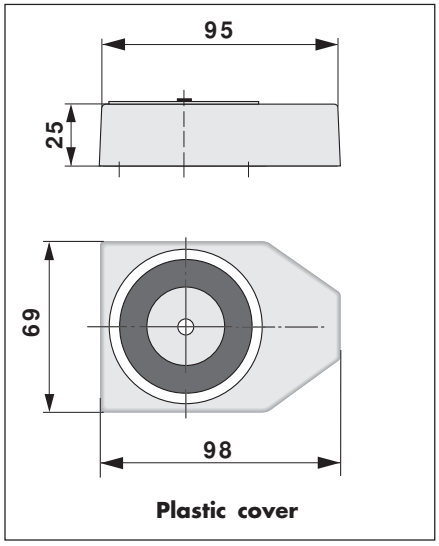
Electromagnets with Connection Terminal

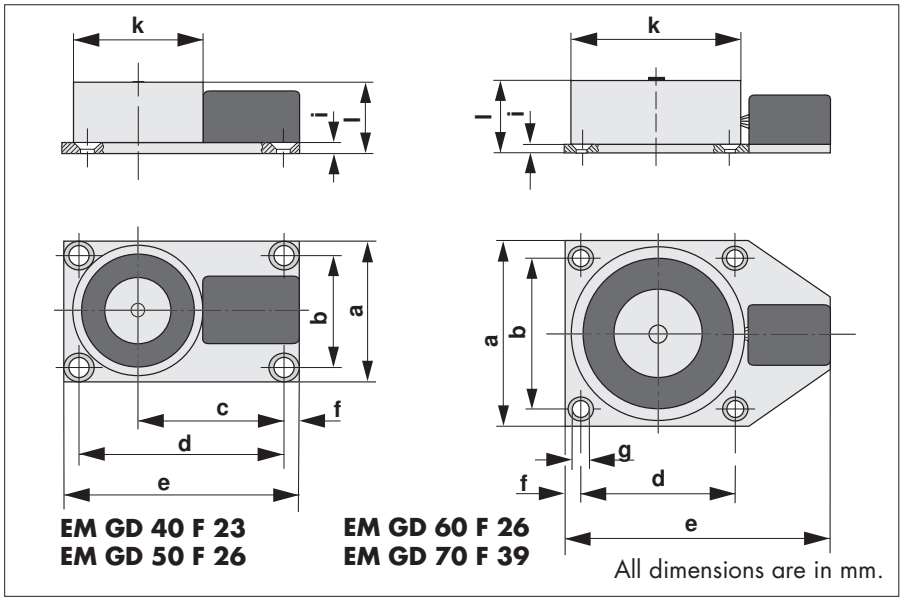
Model F

Electromagnets of the range F include magnets with diameters of 40, 50, 60 and 70 mm. They differ in force and size (see technical data).The connection terminal is on the mounting plate of the magnet.

For the magnets with 60 mm diameter there is also available a cover of white plastics.

Dimensions





	a	b	c	d	e	f	g	i	k	l
EM GD 40 F 23	45	35	45	63	73	5	Ø 4.5	3	Ø 40	23
EM GD 50 F 26	55	44	51	74	83	4.5	Ø 4.5	3	Ø 50	26
EM GD 60 F 26	65	55	-	55	93	5	Ø 4.5	3	Ø 60	26
EM GD 70 F 39	75	60	-	60	103	7.5	Ø 5.5	4	Ø 70	39

Technical Data

* tested according to EN 1155

EM GD	Power consumption	Force	EM GD	Power consumption	Force
40 F 23*	75 mA (1.8 W)	300 N	**70 F 39***	71 mA (1.7 W)	1450 N
50 F 26*	67 mA (1.6 W)	600 N	**70 F 39 S**	142 mA (3.4 W)	1700 N
60 F 26*	67 mA (1.6 W)	700 N	**70 F 39 R**	142 mA (3.4 W)	2000 N
60 F 26 S*	79 mA (1.9 W)	1000 N			

Order Information

EM GD 40 F 23 electromagnet	force	300 N	part no. 040085
EM GD 50 F 26 electromagnet	force	600 N	part no. 040106
EM GD 60 F 26 electromagnet	force	700 N	part no. 040049
EM GD 60 F 26 S electromagnet	force	1000 N	part no. 040163
EM GD 70 F 39 electromagnet	force	1450 N	part no. 040037
EM GD 70 F 39 S electromagnet	force	1700 N	part no. 040115
EM GD 70 F 39 R electromagnet	force	2000 N	part no. 040122
Cover for EM GD 60 F			part no. 205250

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Electromagnet in Plastic Case

with Interrupter Key, for Surface Mounting

DICTATOR electromagnets are appropriate for the use in hold open systems on fire protection doors.

The magnets in plastic casing are available in two versions: with and without lateral Pg7 cable gland. Both types have an interrupter key on top of the casing. The magnet can therefore be used on both left and right opening doors, as the interrupter key is always accessible. The plastic casing on the magnet meets high aesthetic requirements. Installing the magnet is very easy as the key is fixed to the mounting plate. The plastic casing can therefore be completely removed for mounting.

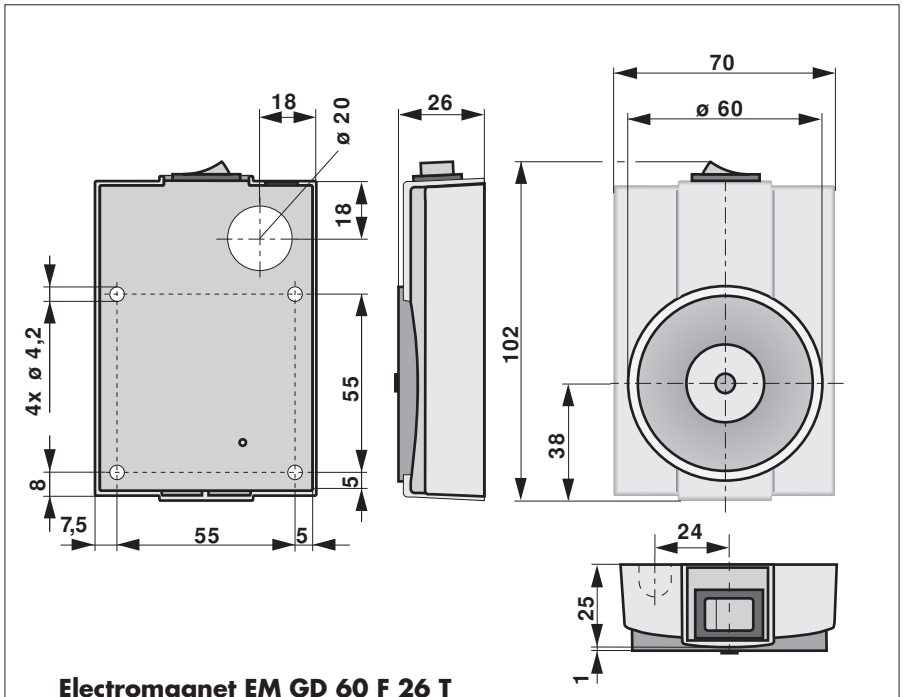
DICTATOR magnets are equipped with a spark extinction diode as standard. In the event of faulty connection, the integrated polarity protection prevents the spark extinction diode being destroyed.

The electromagnets have been tested according to EN 1155:2003 and approved together with the DICTATOR smoke detectors RM 2000 and RM 3000+ by the German building supervision (approval no. Z 6.5-1903).

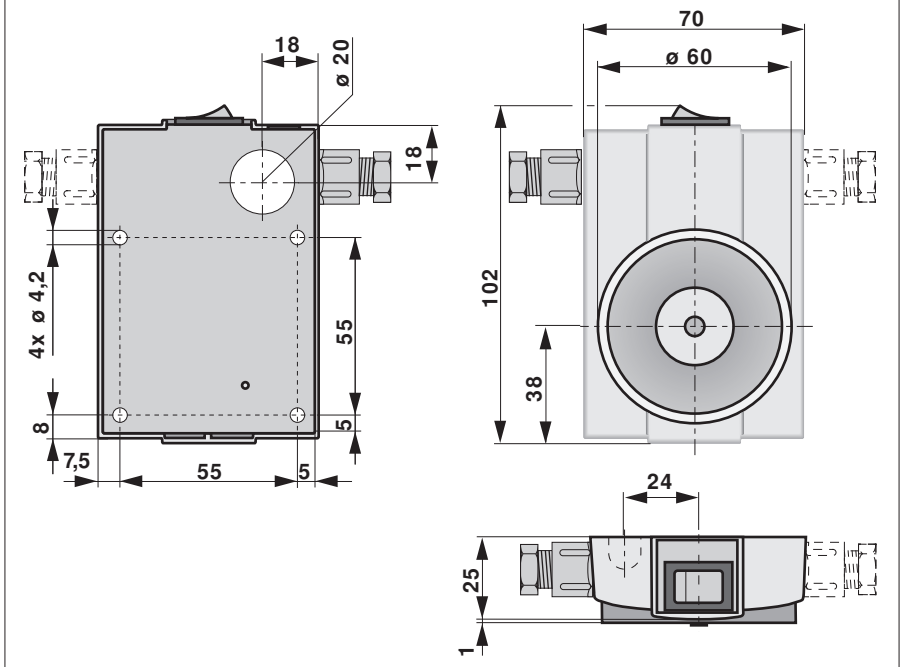
Technical Data

Voltage	24 VDC ±10 %
Power consumption	67 mA (1.6 W)
Duty cycle	100 %
Operating temperature	-20 °C to +60 °C
Force	700 N
Remanence	0 N
Finish	magnet and mounting plate zinc-plated
Colour of casing	white (plastic)

Dimensions



Electromagnet EM GD 60 F 26 T



Electromagnet EM GD 60 F 26 TK

Order Information

EM GD 60 F 26 T electromagnet	force 700 N	part no. 040097
EM GD 60 F 26 TK electromagnet	force 700 N	part no. 040045

Ex-Proof Electromagnet

With Cable or Terminal Box

DICTATOR explosion-proof electromagnets belong to group II of explosion-proof devices and are authorised for use in hazardous locations of classification zones 1 and 2 (according to the standard VDE 0165), with the exception of underground pits.

Explosion-proof magnets are produced with encapsulated protection (EEX m).

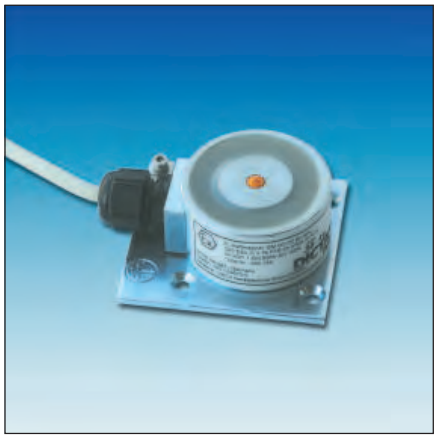
All explosion-proof magnets are equipped with diodes (spark extinction diodes) and polarity protection.

DICTATOR explosion-proof electromagnets have been tested according to EN 1155:2005 and by the Physikalisch-Technische Bundesanstalt in Braunschweig/Germany.

They are registered under the certificate PTB 03 ATEX 2174 X and the confirmation of the conformity to building class PTB 03 ATEX N060 with the PTB Institute, Braunschweig/ Germany. In addition they have been approved by the building authorities.

Technical Data

Electromagnet	**EM GD 50 Ex... m**	**EM GD 70 Ex... m**
Voltage ±15 %	24 VDC	24 VDC
Max. permitted ripple	20 %	20 %
Power consumption (±15 %)	67 mA (1.6 W)	70 mA (1.7 W)
Force / Remanence	600 N / 0 N	1450 N / 0 N
Ex-protection cable design	Ex II 2G EEx m II T6	Ex II 2G EEx m II T6
Ex-protection terminal box	Ex II 2G EEx em II T6	Ex II 2G EEx em II T6
Protection / Duty cycle	IP 66 / 100 %	IP 66 / 100 %
Operating temperature	-20 to +40 °C	-20 to +40 °C
Finish	magnet zinc-plated, terminal box grey laquered	



Explosion-Proof Electromagnet with Connection Cable

The economic DICTATOR explosion-proof electromagnets with connection cable are recommended when a distributing box is available; either a normal one outside the hazardous location, or an explosion-proof box within the area. The magnets are provided with a 2 m connection cable. Other lengths (up to 5 m) can be supplied on request.

The magnet is fixed to a base plate. There are four holes provided in the base plate for easy and fast installation.

Installation

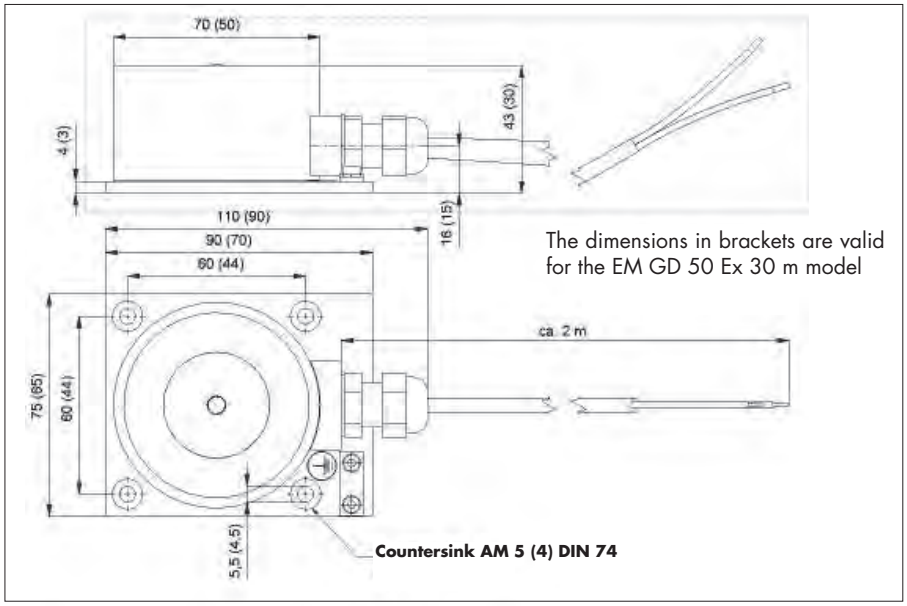
The DICTATOR explosion-proof magnet is fixed to the wall behind the door that needs to be kept open. The connection cable must be securely embedded and sufficiently protected from mechanical damage (e.g. by using a cable channel).

A counter plate needs to be fixed to the door as a counterpart to the magnet. A selection of counter plates can be found following the descriptions of the electromagnets. Make sure that the diameter of the counter plate is at least the same, or larger than that of the magnet.

Important: The encapsulated DICTATOR types "EMGD...Ex...m" can directly be connected to the DICTATOR power packs (see page 07.019.00). However each magnet must be protected by a fuse (G 200 mA type semi-timelag) of max. 3 x I_B according to IEC 60127-2-1 (connected in series), which corresponds to its rated current. On the mounting plate of the magnet a terminal is provided to connect the equipotential bonding conductor of a minimum cross section of 4 mm² to assure the equipotential bonding.

Advice: According to fire protection regulations a hand switch must be installed beside the fire protection door to release it (explosion-proof hand switch, part no. 700232). Please observe the relevant regulations for hazardous areas when mounting and connecting the electromagnet.

Dimensions



Order Information

EMGD50Ex30m electromagnet	EEx m II T6 protection	part no. 040154
EMGD70Ex43m electromagnet	EEx m II T6 protection	part no. 040156

Both models are supplied with a 2 m connection cable.

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Explosion-Proof Electromagnets with Terminal Box

DICTATOR EM GD...Ex...em electromagnets are provided with an explosion-proof terminal box with own binders. The magnets can therefore be connected directly and no further explosion-proof distributing boxes are required. The cable is inserted into the terminal box through a tested ATEX M20x1.5 conduit gland. The connection cable should have an outer diameter of 5 to 10 mm and a maximum wire cross section of 2.5 mm^2. The EM GD...Ex...em electromagnet has "Encapsulation (m)" protection and the terminal box has "Increased safety (e)" protection.

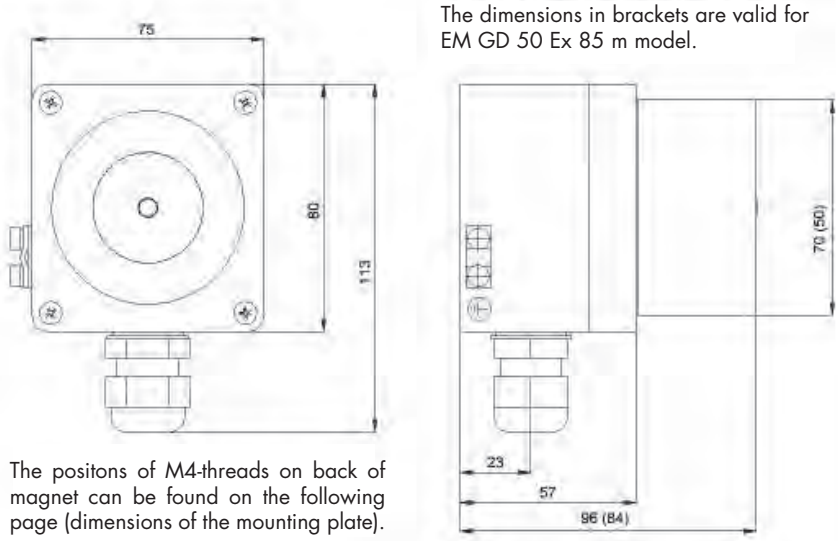
Installation

The DICTATOR explosion-proof magnet with terminal box is fixed to the wall behind the door that needs to be kept open. For a secure installation we recommend our mounting plate, part no. 205252 (see following page), to which the magnet is screwed with 2 M4 screws.
A counter plate needs to be fixed to the door as a counterpart to the magnet. A selection of DICTATOR counter plates can be found following the descriptions of the electromagnets. Make sure that the diameter of the counter plate is at least the same, or larger than that of the magnet.

Important: The encapsulated DICTATOR types "EMGD...Ex...m" can be connected directly to the DICTATOR power packs (see page 07.019.00). However each magnet must be protected by a fuse (G 200 mA type semi-timelag) of max. 3 x I_B according to IEC 60127-2-1 (connected in series), which corresponds to its rated current. On the outside of the terminal box a terminal is provided to connect the equipotential bonding conductor of a minimum cross section of 4 mm^2 to assure the equipotential bonding.

Advice: According to fire protection regulations a hand switch must be installed beside the fire protection door to release it (explosion-proof hand switch, part no. 700232). Please observe the relevant regulations for hazardous areas when mounting and connecting the electromagnet.

Dimensions



The dimensions in brackets are valid for EM GD 50 Ex 85 m model.

The positons of M4-threads on back of magnet can be found on the following page (dimensions of the mounting plate).

Order Information

EMGD50Ex85m electromagnet	EEx m/e II T6 protection	part no. 040157
EMGD70Ex99m electromagnet	EEx m/e II T6 protection	part no. 040159

Both models are supplied with connection box and a M 20 x 1.5 gland

Accessories: Mounting Plate, Fuse

We recommend you to use a mounting plate when installing magnets EM GD 50 Ex 85 and EM GD 70 Ex 99 on a porose surface to ensure they are securely fixed to the wall.

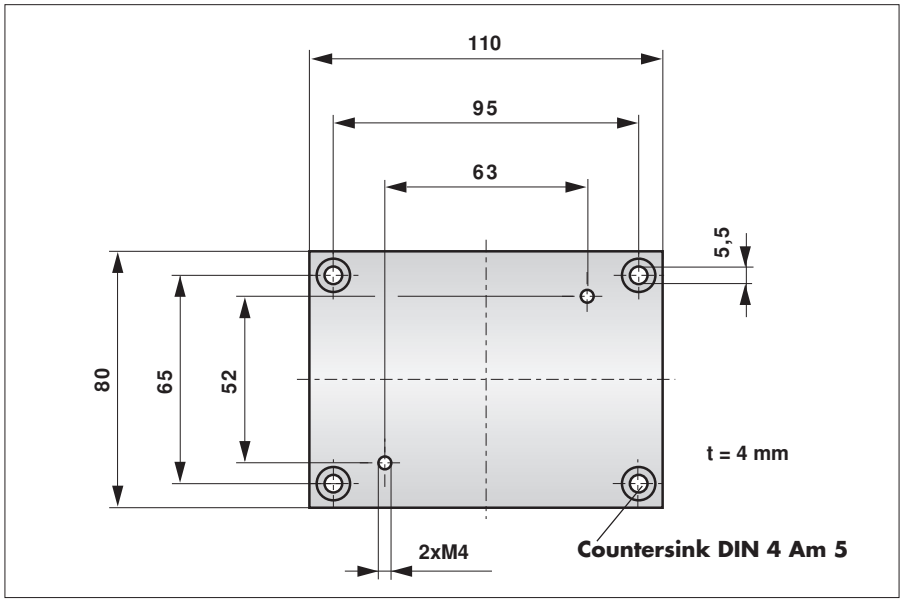
The magnet is screwed to the mounting plate and fixed to the wall with 4 screws.

Each magnet must be protected by a fuse of max. 3 x I_B according to IEC 60127-2-1 (connected in series) (fuse G 200 mA type semi-timelag). DICTATOR furnishes the required fuses type 5x20, semi-timelag and the corresponding fuse carrier.

Mounting Plate

The DICTATOR mounting plate is screwed to the wall behind the door that has to be kept open by the magnet with 4 ø5 flat head screws. The magnet is then fixed to the mounting plate with two M4-screws.

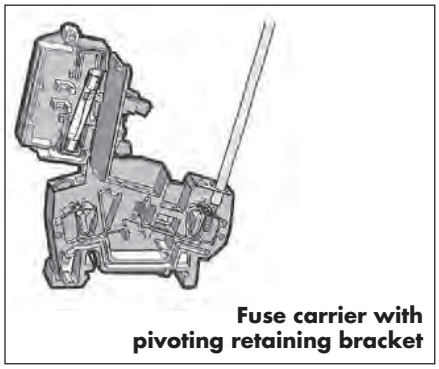
Dimensions



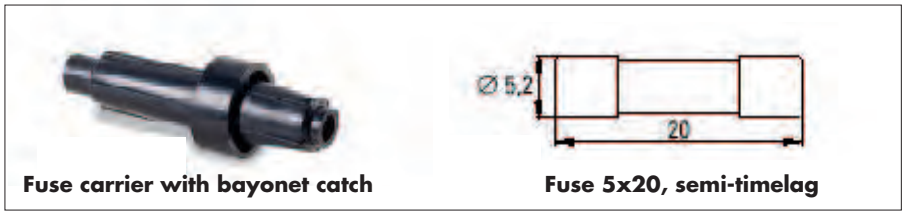
Fuse, Fuse Carrier

The fuse is placed with the fuse carrier directly into the feeding line to the ex-proof magnet. There are available two different types of fuse carriers.

- Fuse carrier for solding directly into the feeding line, with bayonet catch
  Dimensions of the fuse carrier: L = 43.2 mm, ø = 14.2 mm
  Suitable for cables with a cross section up to max. 4 mm
- Fuse carrier for mounting on top hat rails, with pivoting retaining bracket



Fuse carrier with pivoting retaining bracket



Fuse carrier with bayonet catch

Fuse 5x20, semi-timelag

Order Information

Mounting plate for explosion-proof magnets	part no. 205252
Fuse 5 x 20, semi-timelag, 200 MA	part no. 040586
Fuse carrier with bayonet catch	part no. 040587
Fuse carrier with pivoting retaining bracket	part no. 040588

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Electromagnet

For Flush Mounting

DICTATOR electromagnets are mainly used for hold open systems on fire protection doors. Electromagnets for flush mounting are the perfect solution when there is not enough space between the door and wall or when the magnet should be installed in a less visible way.

For the flush installation of the EM GD 50 U 35 a standard flush box is required. This makes the installation very easy. The magnet is inserted into the flush box which then is covered with the white front plate delivered along with the magnet.

The magnet is provided with free cable ends to be connected in the flush box. It is equipped with a spark extinction diode. In the event of faulty connection, the integrated polarity protection prevents the spark extinction diode being destroyed.

The EM GD 50 electromagnet has been **tested according to the EN 1155:2003** standard and is approved in combination with the DICTATOR smoke detectors RM 2000 and RM 3000+ by the German building authorities (approval no. Z 6.5-1903).

Technical Data

Voltage	24 VDC ± 15 %
Power consumption	67 mA (1.6 W)
Force	600 N
Duty cycle	100 %
Operating temperature	-20 °C to +60 °C
Remanence	0 N
Finish	body of the magnet zinc-plated
Front plate	white (plastic)

Installation

The EM GD 50 U 35 magnet is inserted into a standard flush box (see below) and than fixed along with the plastic cover plate to the flush box. The magnet is connected to the 24 VDC power supply inside the flush box by luster terminals.

Further information for the correct installation of the magnet is to be found in the installation instructions provided with the magnet.

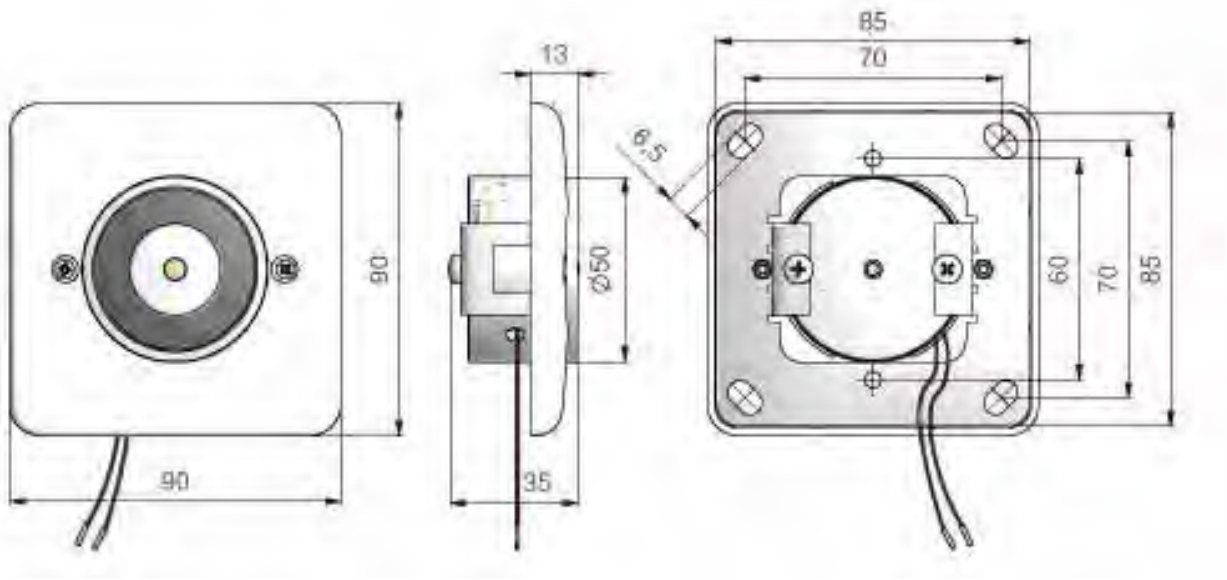
A selection of corresponding counter plates can be found later in this section.

Please note: It must be possible to release a fire protection door held open by an electromagnet with a hand switch which is not hidden by the open door. (DICTATOR hand switch part no. 040005, see diagram on left).

Flush Box

The flush box required for the EM GD 50 U 35 magnet is not included in the delivery. The magnet has been designed for standard flush boxes with a minimum depth of 35 mm and a distance between the fixing holes of 60 mm (see drawing below)

Dimensions



All dimensions are in mm

Order Information

EM GD 50 U 35 electromagnet	force 600 N	part no. 041011

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Electromagnet

For Installation on the Floor

DICTATOR electromagnets are used in hold open systems on fire protection doors. The EM GD 60 FB is designed for the installation on the floor.

Its casing, made of cast aluminium is rugged and solid. This is very important as due to its position on the floor it is bound to be hit or knocked at by cleaning machines, vacuum cleaners or even people. Or the floor is mopped frequently and the casing is quite often in contact with water. As the casing is made of aluminium it will not rust.

The floor magnet can be furnished either with or without a red interruptor key on the back of the casing.

DICTATOR magnets are equipped with a spark extinction diode. In the event of faulty connection, the integrated polarity protection prevents the spark extinction diode being destroyed.

The EM GD 60 electromagnet for the installation on the floor has been tested and is together with the DICTATOR smoke detectors RM approved by the German building authorities (**approval** no. Z-6.5-1903).

Technical Data

Voltage	24 VDC
Power consumption	67mA (1,6 W)
Duty cycle	100 %
Operating temperature	-20 °C up to +60 °C
Force	700 N
Remanence	0 N
Colour of casing	black, structured

Installation

The cable for the electric connection (24 VDC) of the magnet is run in the floor to the position, where the magnet is going to be fixed. The exact position has to be determined by opening the door and placing the magnet behind the opened door. If you have selected the magnet with interruptor key please make sure it is easily accessible.

Drill the holes for the dowels into the floor, using the template delivered with the magnet.

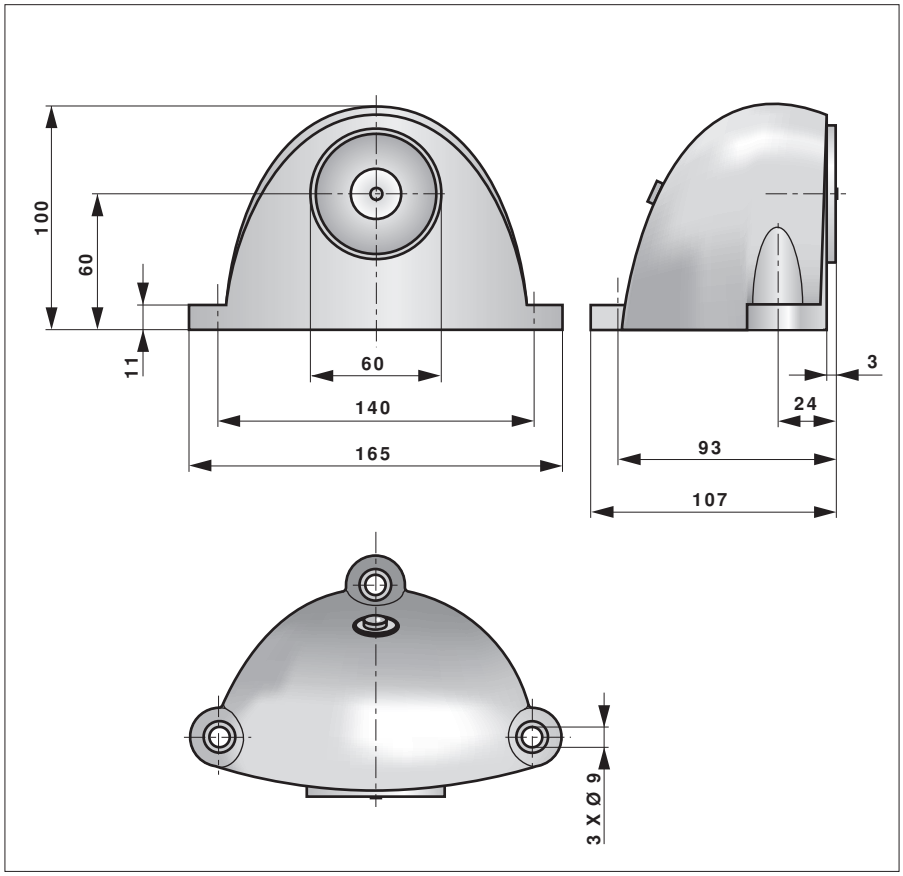
Connect the cable to the binders of the magnet and then fix the magnet with 3 screws to the floor.

A counter plate needs to be fixed to the door as a counterpart to the magnet (use one of the series AP GD 60...).The diameter of the counterplate must match the diameter of the electromagnet. A selection of counter plates can be found later in this section.

Please note:

It must be possible to release a fire protection door held open by an electromagnet with a hand switch which is not hidden by the open door (DICTATOR hand switch part no. 040005, see illustration on left).

Dimensions



Order Information

EM GD 60 FB electromagnet	force 700 N	part no. 040370
EM GD 60 FB oT without interruptor key	force 700 N	part no. 040371

Electromagnet

With Feed-Back Contact (Models ST/RM)

DICTATOR electromagnets with feed-back contact are used when information as to whether the counter plate adheres to the magnet (i.e. that the door is opened or closed) is required elsewhere. This is necessary for fire protection doors integrated in complex transport systems in big stores, for central control and monitoring systems or even for machines.

When the counter plate adheres to the magnet and if this is supplied with tension, this is registered by an integrated contact (NO) which passes on the information to the area required.

There are two models of magnets with feed-back contact:

- with connection terminal on the base plate (model **RM**, see ill.)
- with a 4-pole plug-in termination (model **ST**). The corresponding connector is available as accessory.

Model RM and ST electromagnets have been **tested** and are **approved** together with the DICTATOR smoke detectors RM by the German building authorities (approval no. Z-6.5-1903).

Technical Data

EM GD Electromagnet	Model RM	Model ST
Voltage	24 VDC ±15 %	
Power consumption ±10 %	see information on the following pages	
Force	600 N - 1450 N	
Duty cycle / Remanence	100 % / 0N	
Operating temperature	-20 °C to +60 °C	
Finish	magnet and mounting plate zinc-plated	
IP rating	IP 20	IP 53
Contact type	1 x NO	
Switchable load	max. 180 V DC/AC; max 0.5 A DC/AC	

Electromagnet with Feed-Back Contact

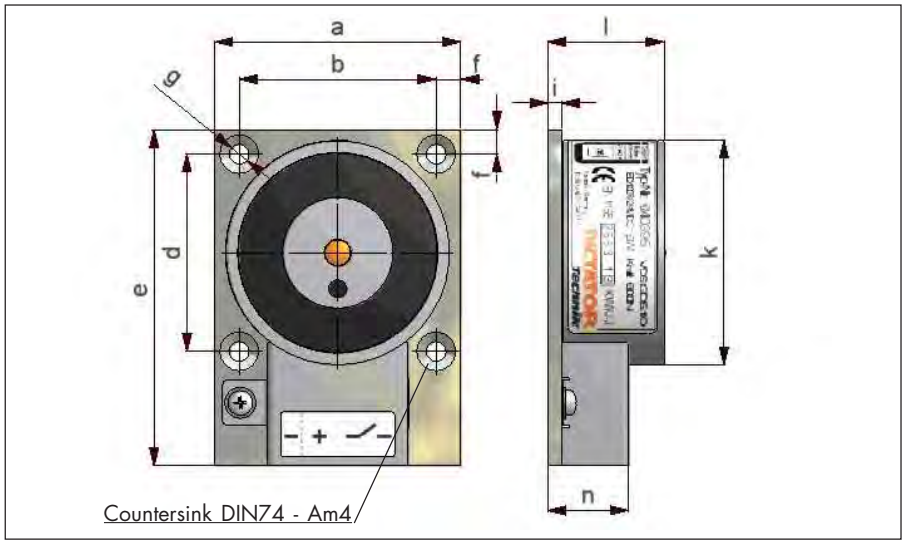
Model RM

The RM electromagnets are equipped with a connection terminal on the base plate for the 24 VDC power supply and the feed-back contact (NO). Due to this type of connection terminal the protection is IP 20. If a higher protection is required we recommend to use the ST model (see next page).

The electromagnet covers a large range of admissible switching voltages and currents.

Information concerning the correct installation are to be found on the page next but one.

Dimensions



Type	a	b	d	e	f	g	i	k	l	n
EM GD 50 F26 RM	55	44	44	75	5.5	Ø 4.5	3	Ø 50	26	18
EM GD 60 F26 RM	65	55	55	85	5	Ø 4.5	3	Ø 60	26	18
EM GD 70 F39 RM	75	60	60	95	7.5	Ø 5.5	4	Ø 70	39	19

All dimensions are in mm

Technical Data

EM GD Electromagnet	50 F26 RM	60 F26 RM	70 F39 RM
Voltage		24 VDC ±15 %	
Power consumption ±10%	67 mA (1.6 W)	67 mA (1.6 W)	71 mA (1.7 W)
Force	600 N	700 N	1450 N
Duty cycle		100 %	
Operating temperature		-20 °C to +60 °C	
Remanence		0 N	
IP rating		IP 20	
Contact type		1 x NO	
Rupturing capacity		max. 10 VA (for each combination current/voltage)	
Switchable load		max. 180 V DC/AC; max. 0.5 A DC/AC	

Order Information

EM GD 50 F26 RM Electromagnet	force 600 N	part no. 040395
EM GD 60 F26 RM Electromagnet	force 700 N	part no. 040396
EM GD 70 F39 RM Electromagnet	force 1450 N	part no. 040397

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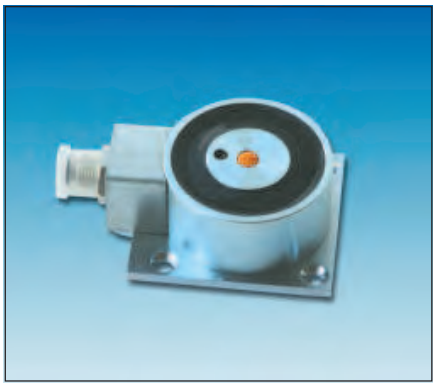


Electromagnet with Feed-Back Contact

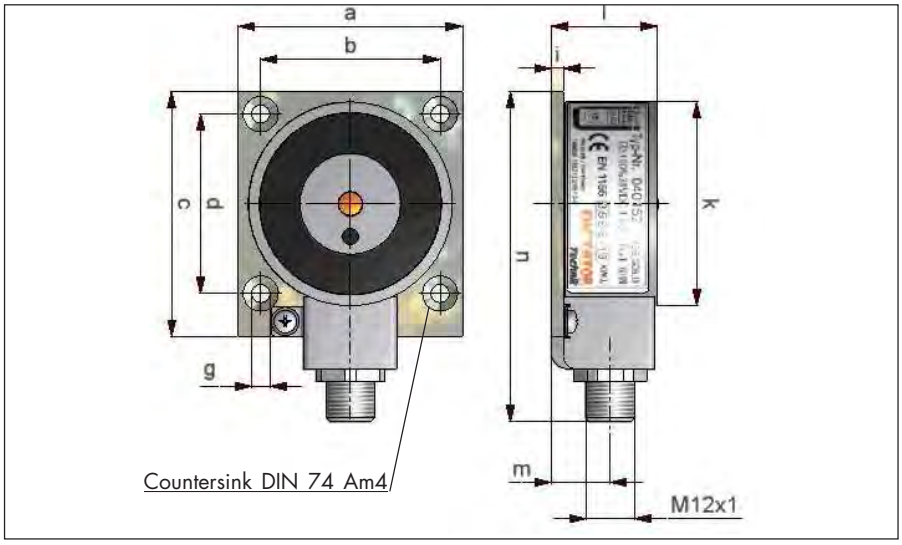
Model ST

The ST model electromagnets with feed-back contact are equipped with a 4-pole plug-in termination. We provide the corresponding connector as accessory. The plug-in connection reduces the installation time, avoids errors when connecting the magnet and increases the IP rating of the magnet with the connection cable plugged-in.

The electromagnet covers a large range of admissible switching voltages and currents.

Information concerning the correct installation is to be found on the next page.

Dimensions



Type	a	b	c	d	g	i	k	l	m	n
EM GD 50 F26 ST	55	44	60	44	Ø 4.5	3	Ø 50	26	14.5	81
EM GD 70 F39 ST	75	60	80	60	Ø 5.5	5	Ø 70	39	19.5	102

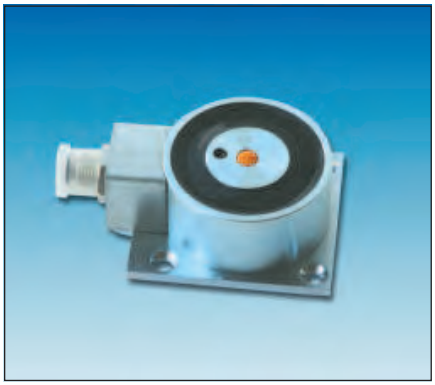
All dimensions are in mm

Technical Data

EM GD Electromagnet	50 F26 ST	70 F39 ST
Voltage	24 VDC ±15 %	
Power consumption ±10 %	67 mA (1.6 W)	71 mA (1.7 W)
Force	600 N	1450 N
Duty cycle	100 %	
Operating temperature	-20 °C to +40 °C	
Remanence	0 N	
IP rating	IP 53 (with connection cable plugged in)	
Contact type	1x NO	
Breaking capacity	max. 10 VA (for each combination current/voltage)	
Switchable load	max. 180 V DC/AC; max 0.5 A DC/AC	

Order Information

EM GD 50 F26 ST Electromagnet	force 600 N	part no. 040152
EM GD 70 F39 ST Electromagnet	force 1450 N	part no. 040153
Circular connector M12x1	with connection cable	part no. 040187



Electromagnet with Feed-Back Contact

Installation

The magnet is fixed to the wall behind the door that needs to be kept open. In case of sliding doors it is installed in the position of the opened door. A counter plate needs to be fixed to the door as a counterpart to the magnet. Make sure that the counter plate completely covers the magnet and that it lies straight on the magnet. A selection of counter plates can be found later in this section.

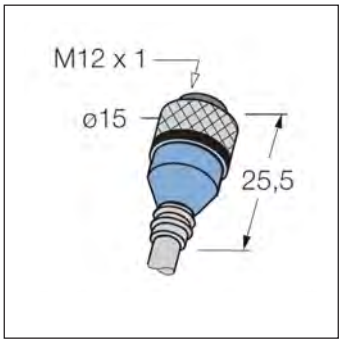
Please note: It must be possible to release a fire protection door held open by an electromagnet with a hand switch which is not hidden by the open door. (DICTATOR hand switch part no. 040005).

Electrical Connection

The **electrical connection** of the RM and ST models is different. The **RM model** can be used in any case as it is provided with a **connection terminal**. Each terminal is marked in order to make the connection as easy as possible.

The **ST models** are equipped with a 4-pole plug-in termination directly at the magnet. To connect this magnet there is required a circular connector M12x1 (part no. 040187). The ST model will be used especially in large installations or when the magnet is already installed during production of the doors or e.g. complete conveying systems. Installation time is reduced considerably due to the plug-in connector and errors are avoided.

Circular Connector M12x1



Technical Data

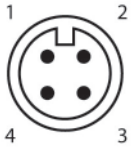
IP rating	IP 67 (screwed on)
Load capacity	4 A, max. 250 V
Length of cable	10 m
Coupler	straight
	with swivel nut

Pin Assignment Model ST

Pin Assignment

Magnet

Circular connector



Connector	*Colour of cable*	*Connection*
1	brown	Power supply 24 VDC
2	white	Power supply 24 VDC
3	blue	Feed-back contact (NO)
4	black	Feed-back contact (NO)

Three Pole Heavy Duty Magnet

With Very High Forces (5000 N)

The DICTATOR three pole heavy duty magnet with 5000 N force is designed for applications where very high holding forces are necessary (e.g. large doors, conveying systems etc.).

It consists of three single EM GD 70 magnets which are arranged in a white powder-coated casing (RAL 9010). This makes the heavy duty magnet a very economic solution when high forces are required, and easy to install too.

The heavy duty magnet is available in two models: as a normal electromagnet and with an additional feed-back contact (ST). The latter has an integrated relay contact which registers whether the push back pin is compressed (counter plate lies against the magnet) or whether the pin is free. This information can be passed on, e.g. to a surveillance centre.

To achieve maximum force the AP FH counter plate should always be used with the heavy duty magnet.

The DICTATOR heavy duty magnet is equipped with a spark extinction diode. In the event of faulty connection the integrated polarity protection prevents the spark extinction diode being destroyed.

Technical Data

EM Electromagnet	FH 265x82x55	FH 265x82x55 ST
Voltage	24 VDC ± 10 %	24 VDC ± 10 %
Power consumption	438 mA (10.3 W)	438 mA (10.3 W)
Force	5000 N	5000 N
Duty cycle	100 %	100 %
Operating temperature	-20 °C to +40 °C	-20 °C to +40 °C
Remanence	0 N	0 N
Finish	magnet zinc-plated, casing white powder coated	
IP rating	IP 40	IP 40
Relay contact/switchable load	no	yes, 24 VDC /5 A

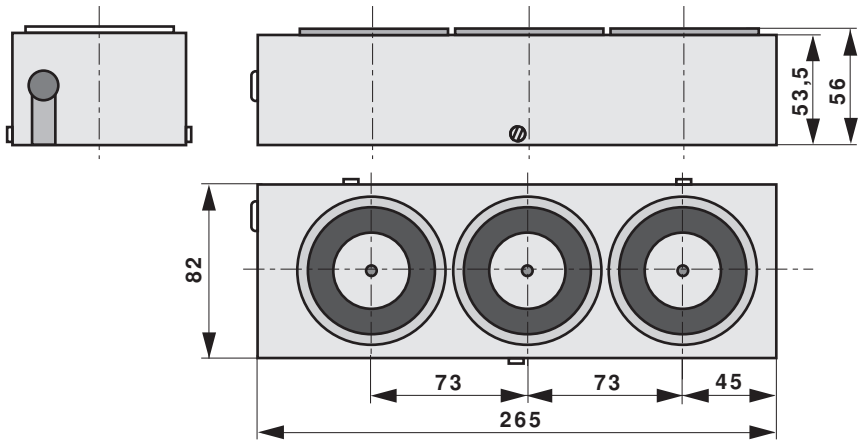
Installation

When using the three pole heavy duty magnets for doors, the magnet is mounted on the wall behind the door that needs to be kept open. The AP FH counter plate 235x75x20 is fixed to the door as a counterpart to the magnet. To achieve the 5000 N force and activate the relay contact, make sure that the counter plate completely covers the single magnets and that it lies evenly.

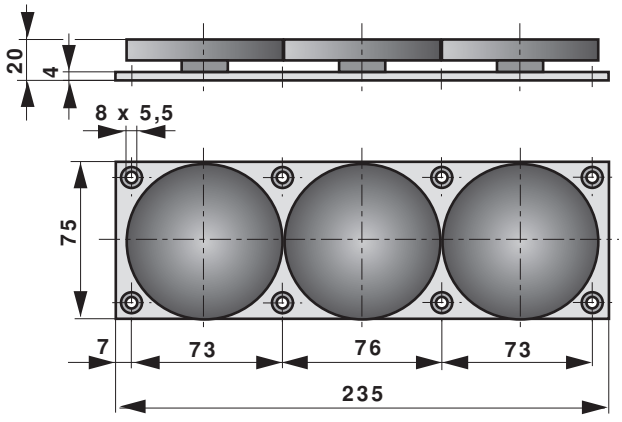
Remove the magnet casing when installing and screw the mounting plate with the three magnets to the wall. A terminal is provided on the base plate for the electrical connection. Screw the casing back on the base plate after mounting and wiring.

Dimensions

EM FH 265x82x55 (ST) Electromagnet



AP FH 235x75x20 Counter plate



Order Information

EM FH 265x82x55 electromagnet	force 5000 N	part no. 040270
EM FH 265x82x55 ST electromagnet	force 5000 N	part no. 040271
AP FH 235x75x20 counter plate		part no. 040290

Bar Magnet

High Holding Force - Small Size

The DICTATOR EM FH bar magnet 100x24x27 is the perfect solution when a normal (round) electromagnet with a comparable holding force does not fit. With a width of only 24 mm the **narrow** bar magnet can also be placed unobtrusively in applications with **restricted space** (e.g. in smoke vents in the window frame). Its 400 N holding force is very high and corresponds to that of a round electromagnet with a diameter of at least 40 mm.

The bar magnet is placed on a mounting plate along with a connection terminal. This facilitates installation and the electrical connection.

Due to its small, narrow dimensions the bar magnet is not provided with a release pin. However the remanence of the magnet is only 4 N.

The DICTATOR bar magnet is equipped with a spark extinction diode. In the event of faulty connection the integrated polarity protection prevents the spark extinction diode being destroyed.

Technical Data

Voltage	24 VDC ± 10 %
Power consumption	88 mA (2.1 W)
Force	400 N
Duty cycle	100 %
Operating temperature	-20 °C to +40 °C
Remanence	4 N
Finish	zinc-plated
IP rating	IP 20 (DIN 400 50)

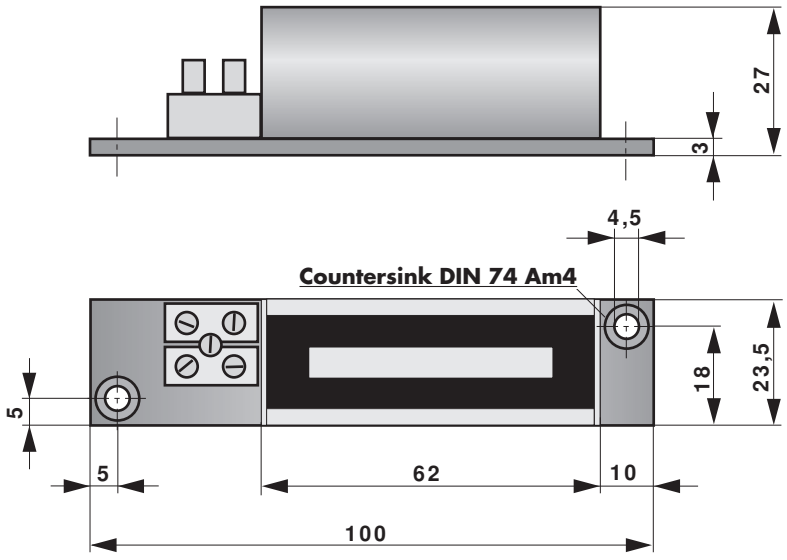
Installation

When using the bar magnet on windows it is fixed with 2 M4 screws in a recess of the frame. The AP FH 70x30x5 counter plate is mounted on the window as a counterpart to the magnet. Make sure that the counter plate completely covers the bar magnet and lies straight.

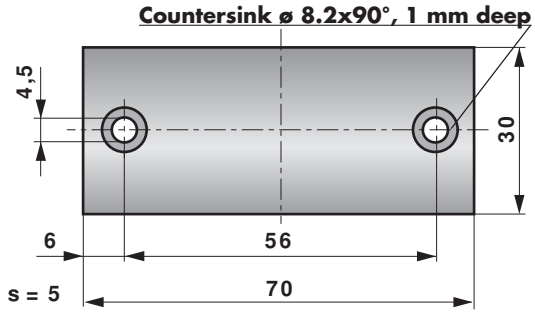
A two-channel terminal is provided on the mounting plate for the electrical connection to the 24 VDC power supply.

Dimensions

EM FH 100x24x27 Bar magnet



AP FH 70x30x5 Counter plate



Order Information

EM FH 100x24x27 bar magnet	force 400 N	part no. 040273
AP FH 70x30x5 counter plate		part no. 040291

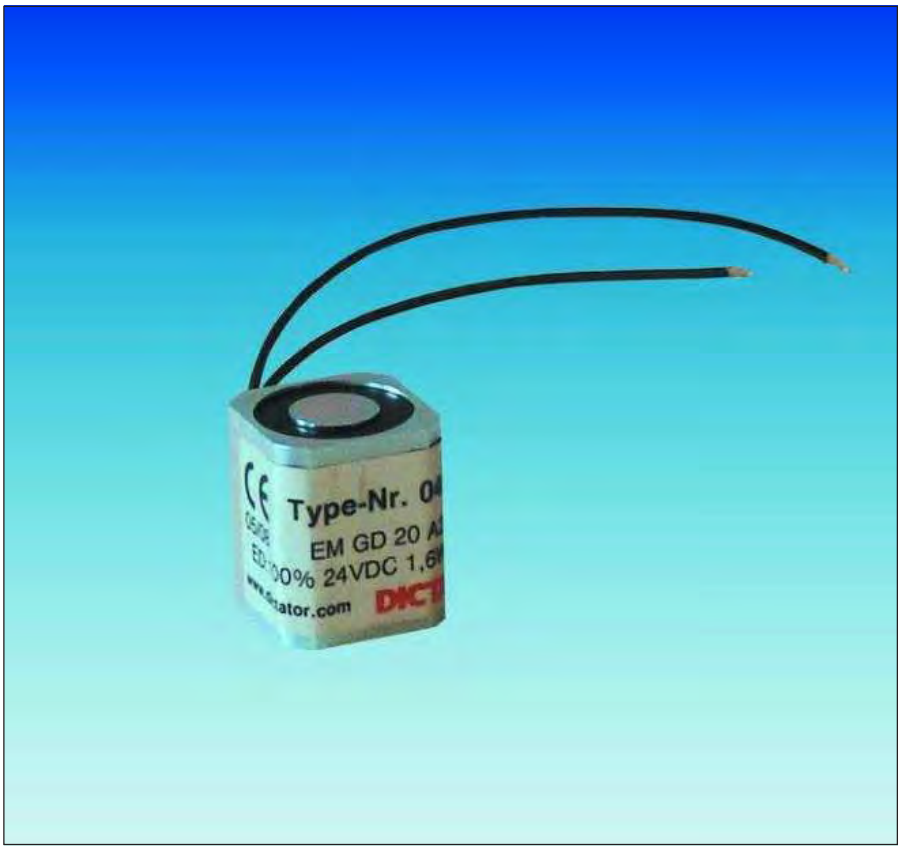
□ 20 mm Electromagnets

with Free Leads, without Release Pin

The DICTATOR electromagnets go into the most different applications. Apart from magnets for the approved use on fire protection doors DICTATOR magnets are used amongst others in the machine construction sector (e.g. blocking of access doors to machining centres with feed-back contact) or the building sector (e.g. to keep windows or flaps locked/ opened).

One of the most important features of the DICTATOR electromagnets is their low power consumption combined with the highest possible force.

The smallest magnet of the DICTATOR magnet line is the EM GD 20. Due to its very small dimensions (□ 20 mm) it can be placed unobtrusively also in applications with restricted space. In order to facilitate its installation the magnet EM GD 20 is furnished in two designs: one with mounting plate and one without (this is provided with a threaded hole at the bottom of the magnet).



Technical Data

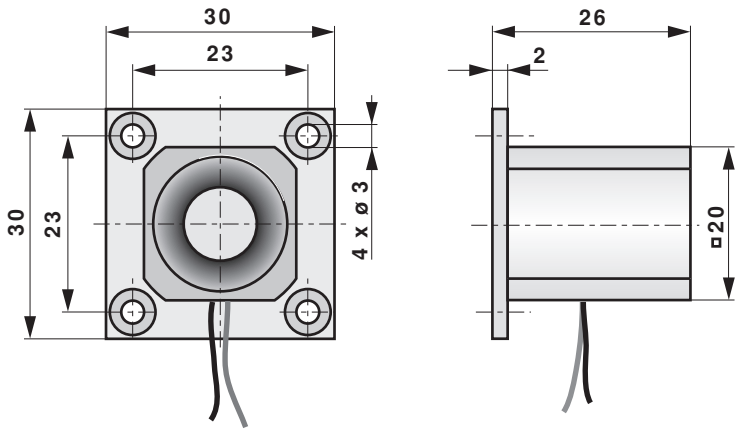
Voltage	24 VDC ± 10 %
Power consumption	67 mA (1.6 W)
Duty cycle	100 %
Operating temperature	-20 °C to +60 °C
Force	130 N
Remanence	max. 10 N
Finish	zinc-plated
IP rating	IP 20
Electrical connection	cable, length 240 mm

Installation

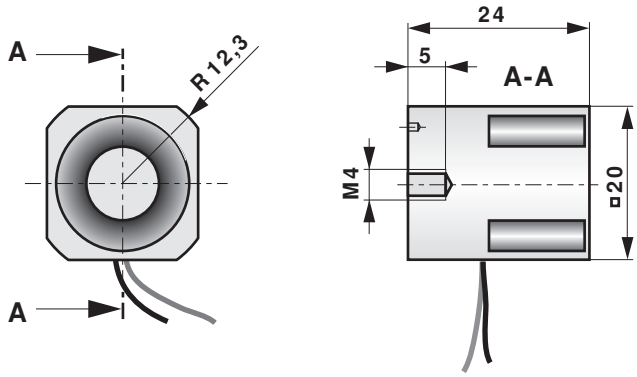
In order to achieve the maximum force of the magnet, the counter plate AP GD 25 has to be used together with the magnets. On demand it can also be supplied without its mounting plate. When fixing the counter plate make sure it completely covers the magnet.

Dimensions

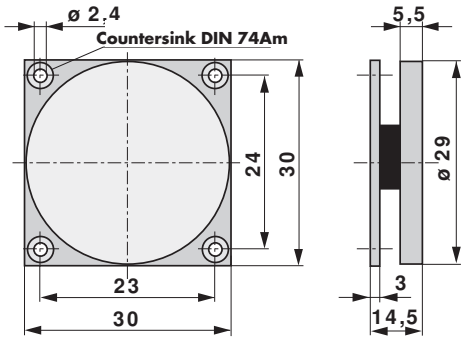
EM GD 20 B 26 Electromagnet



EM GD 20 A 24 Electromagnet



Counter plate AP GD 25 G 15



All dimensions are in mm.

Order Information

EM GD 20 A 24 electromagnet	force 130 N	part no. 040380
EM GD 20 B 26 electromagnet	force 130 N	part no. 040381
AP GD 25 G 15 counter plate		part no. 040024

Flexible Counter Plate

With Elastic Joint (Model G)

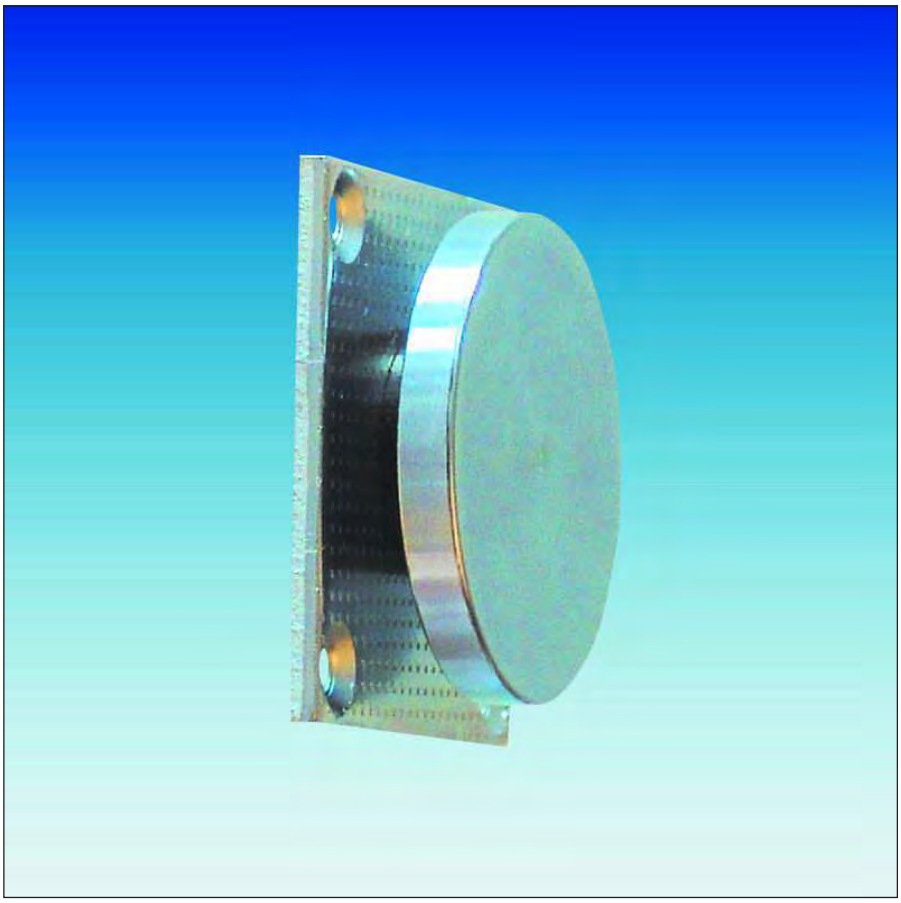
DICTATOR counter plates provide the safe and reliable connection between door and electromagnet.

Model G counter plates consist of a zinc-plated mounting plate, an elastic joint and a smooth, zinc-plated anchor plate.

To achieve maximum holding force the anchor plate should always have at least the same diameter as the electromagnet and lie flat against the magnet face.

The elastic joint between anchor and mounting plate compensates for an angle of up to 10° between door and magnet.

Model G flexible counter plates have been tested in combination with DICTATOR electromagnets.



Order Information

AP GD 40 G 14 counter plate	Ø 44	part no. 040089
AP GD 50 G 16 counter plate	Ø 54	part no. 040025
AP GD 60 G 16 counter plate	Ø 64	part no. 040039
AP GD 60 G 30 counter plate	Ø 64	part no. 040096
AP GD 60 G 60 counter plate	Ø 64	part no. 040084
AP GD 70 G 20 counter plate	Ø 74	part no. 040026

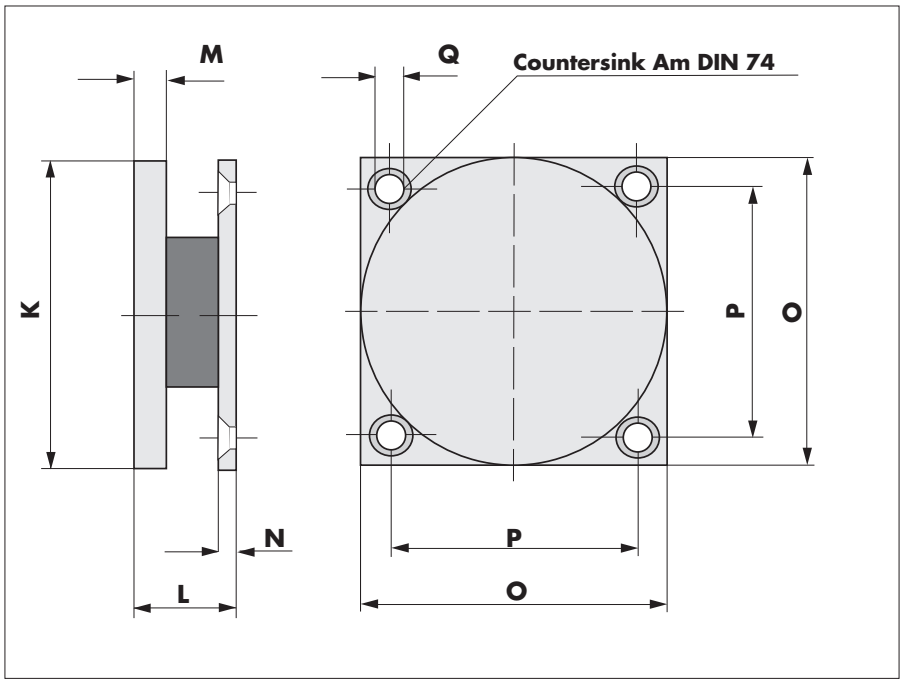
Installation

When fixing DICTATOR counter plates to the door make sure they completely cover the magnet.

It is important not to damage the surface of the counter plate (e.g. by scratches or painting) as this would reduce the force of the magnet.

Important: It is imperative to follow the instructions given by the door manufacturer when installing the counter plates.

Dimensions



Counter plate	K	L	M	N	O	P	Q
AP GD 40 G 14	Ø 44	14	5.5	3	50	40	Ø 4.5
AP GD 50 G 16	Ø 54	16	7	3	55	44	Ø 4.5
AP GD 60 G 16	Ø 64	16	7	3	65	55	Ø 4.5
AP GD 60 G 30	Ø 64	30	7	3	65	55	Ø 4.5
AP GD 60 G 60	Ø 64	60	7	3	65	55	Ø 4.5
AP GD 70 G 20	Ø 74	20	10	4	75	60	Ø 5.5

All dimensions are in mm.

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Counter Plate

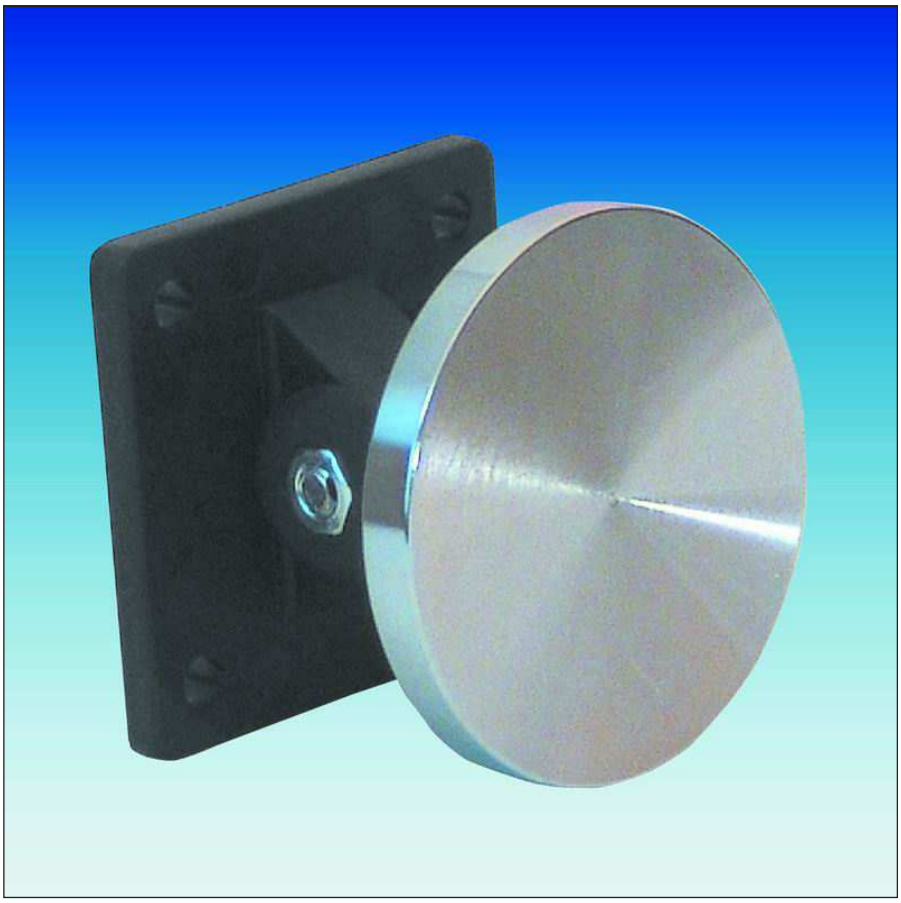
With Angular Joint

DICTATOR counter plates provide the safe and reliable connection between door and electromagnet.

Due to its angular joint the counter plate allows for an angle compensation between door and magnet of maximum 60° in both directions. The counter plate is fixed in the required position. Smaller angle deviations are compensated by an elastic element between plate and base.

To achieve maximum holding force the counter plate should always have at least the same diameter as the electromagnet and lie flat against the magnet face.

The flexible counter plates with angular joint have been tested in combination with DICTATOR electromagnets.



Order Information

AP GD 40 W 50 counter plate	Ø 44	part no. 040072
AP GD 50 W 50 counter plate	Ø 54	part no. 040027
AP GD 60 W 50 counter plate	Ø 64	part no. 040070
AP GD 70 W 54 counter plate	Ø 74	part no. 040068

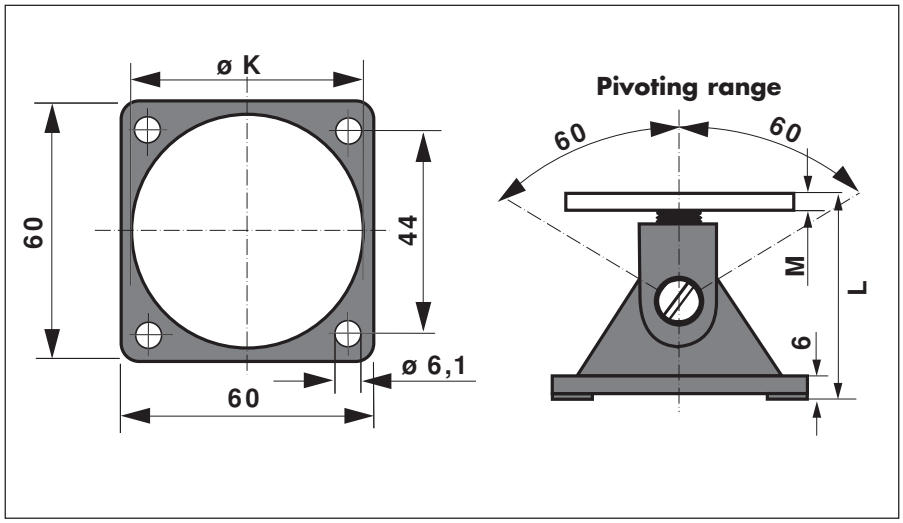
Installation

When fixing DICTATOR counter plates to the door, make sure they completely cover the magnet.

It is important not to damage the surface of the counter plate (e.g. by scratching or painting) as this would reduce the force of the magnet.

Important: It is imperative to follow the instructions of the door manufacturer when installing the counter plates on fire protection doors.

Dimensions



Counter plate	K	L	M
Counter plate AP GD 40 W 50	Ø 44	50	5,5
Counter plate AP GD 50 W 50	Ø 54	51	7
Counter plate AP GD 60 W 50	Ø 64	51	7
Counter plate AP GD 70 W 54	Ø 74	54	10

All dimensions are in mm.

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Telescopic Counter Plate

with Damping

DICTATOR counter plates are used to provide the anchor for DICTATOR electromagnets. The integrated spring on telescopic counter plates **dampens the impact** of the doors on the magnet. They are therefore particularly recommended for **big, heavy doors**. They ensure the magnet remains on the counter plate even when the door hits the magnet at high speed and force. They also reduce unnecessary wear and tear on the door and magnet. The spring force is about 100 N on a stroke of 20 mm.

The new telescopic counter plates combine the advantages of both previous telescopic counter plates in one design: **rugged** and **solid** construction, a **modern** design and **economic** production.

The casing is made of **fiber-glass reinforced plastic**. Due to the flexible joint below, the armature plate itself can compensate for angles up to 10° between magnet and counter plate. A spring integrated in the casing damps the impact of the door on the magnet. This prevents the door from springing back.

The counter plates have been tested in combination with DICTATOR electromagnets.

Technical Data

Material of the casing	PA 66, glass-fiber reeinforced
Colour of the casing	anthracite
Armature plate	zinc-plated steel
Damping force	100 N on a stroke of 20 mm

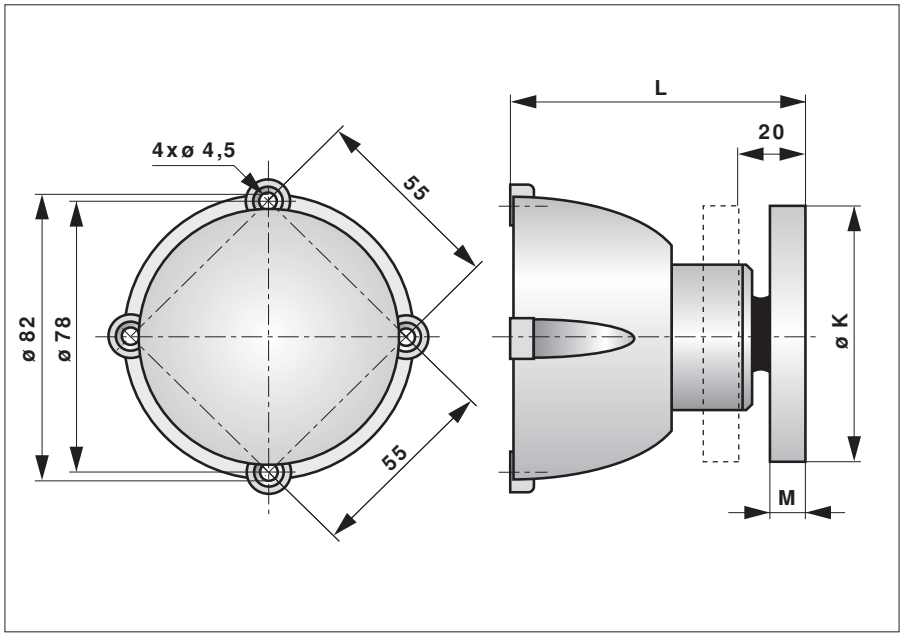
Installation

The telescopic counter plate casing is fixed to the door with 4 M4 countersunk head screws. When fixing the telescopic counter plate, make sure that the surface of the plate lies flat against the magnet face and covers it completely. To achieve maximum holding force, the diameter of the counter plate must be at least the same as that of the magnet.

The surface of the counter plate must not be damaged (e.g. by scratching and painting) as this would reduce the holding force of the magnet.

Important: it is imperative to follow the instructions of the door manufacturer when installing the counter plate on fire protection doors.

Dimensions



Counter plate	K	L	M
AP GD 50 T 80	Ø 54	80	7
AP GD 60 T 80	Ø 64	80	7
AP GD 70 T 84	Ø 74	84	10

All dimensions are in mm.

Order Information

AP GD 50 T 80 counter plate	Ø 54	part no. 040071
AP GD 60 T 80 counter plate	Ø 64	part no. 040028
AP GD 70 T 84 counter plate	Ø 74	part no. 040029

Distance Bracket

For Electromagnets EM GD 50 and EM GD 60

DICTATOR offers a distance bracket for a fast and easy installation of the electromagnets to the wall or floor. The **head** can be turned. It may be **swiveled** up to **180°** and thus can be adapted to the most different hitting angles of the door. Furthermore the **height/length** of this bracket can be adjusted up to 70 mm.

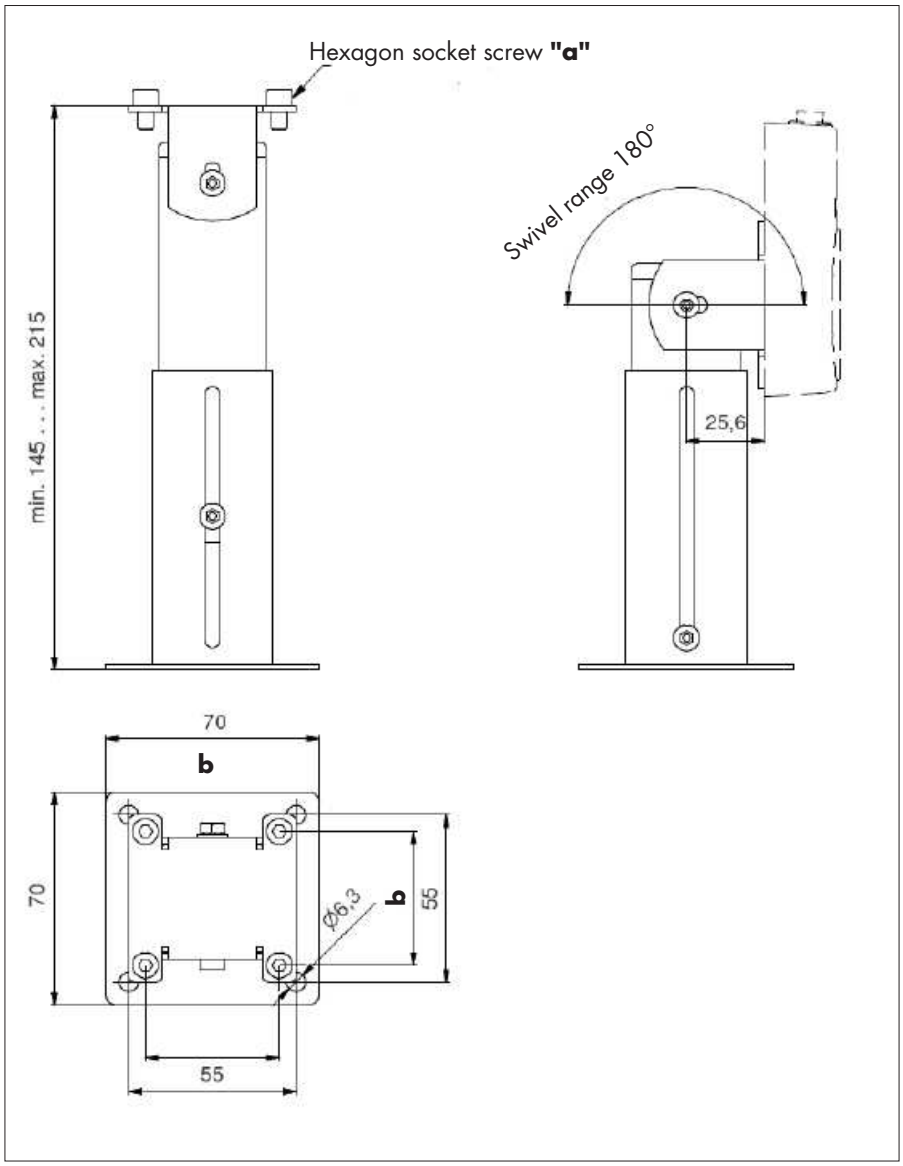
The electromagnet is fixed to the distance bracket simply by using the four included hexagon socket screws.

When choosing your distance bracket, please mind the different distances between the holes in the base plate of the electromagnet and their different diameters.

Technical Data

Material	sheet steel
Finish	laquered white (RAL 9010)
Swivel range	180°
Adjustability of length/height	70 mm

Dimensions



Bracket	a	b	appropriate for magnets (e.g.)
040124	M4	44 mm	EM GD 50 R26, R26I, F26
040126	M5	44 mm	special types as EM GD 50 F25T
040127	M4	55 mm	EM GD 60 R26, R26I, F26

Order Information

Distance bracket white, fixing measures 44x44 mm/M4	part no. 040124
Distance bracket white, fixing measures 44x44 mm/M5	part no. 040126
Distance bracket white, fixing measures 55x55 mm/M4	part no. 040127

Hand Switch for Hold-Open Systems

German fire protection regulations state that a switch with an appropriate inscription is obligatory for hold-open systems on fire protection doors.

The DICTATOR hand switch meets these demands. The fire-protection door is released by pressing the hand switch.

The hand switch is also available for flush mounting.

In hold-open systems with DICTATOR RM 3000+ smoke or WM 3000+ heat detectors and DICTATOR electromagnets, connect the hand switch to the first smoke or heat detector.

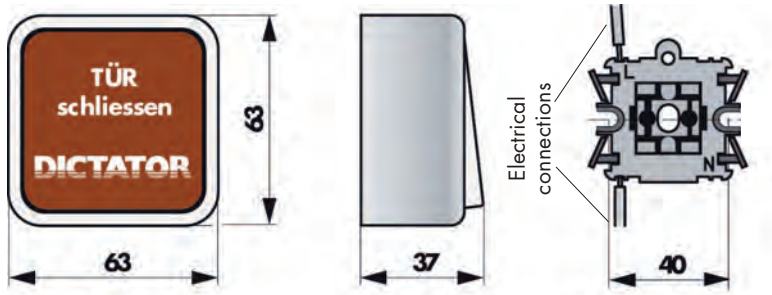
The hand switch should be mounted beside the door in a clearly visible position when the door is open.

Order Information

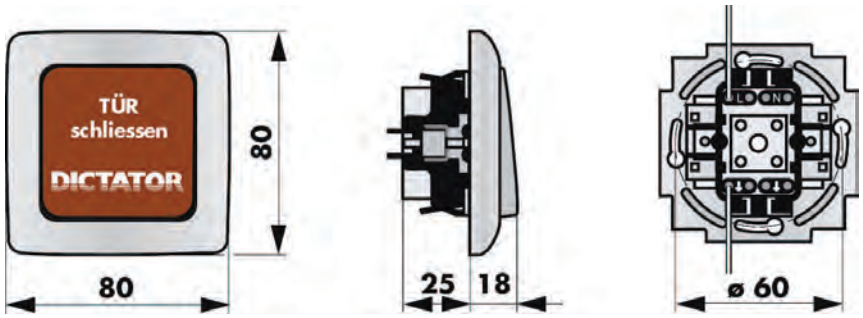
Hand switch for surface mounting	Part no. 040005
Rocker red without print for hand switch no. 040005	Part no. 040005WRN
Rocker white without print for hand switch no. 040005	Part no. 040005WWN
Hand switch for flush mounting	Part no. 040053

Dimensions

Hand switch for surface mounting



Hand switch for flush mounting



HLS Bolting

Safely Closed Fire Protection Doors - Without Gap

Perfectly functioning fire and smoke protection doors are an indispensable requirement for preventing and limiting damage. Especially with hinged doors, the great heat of a fire might cause the door to distort. This could produce a dangerous gap through which the fire could spread further, in spite of the fire protection door.

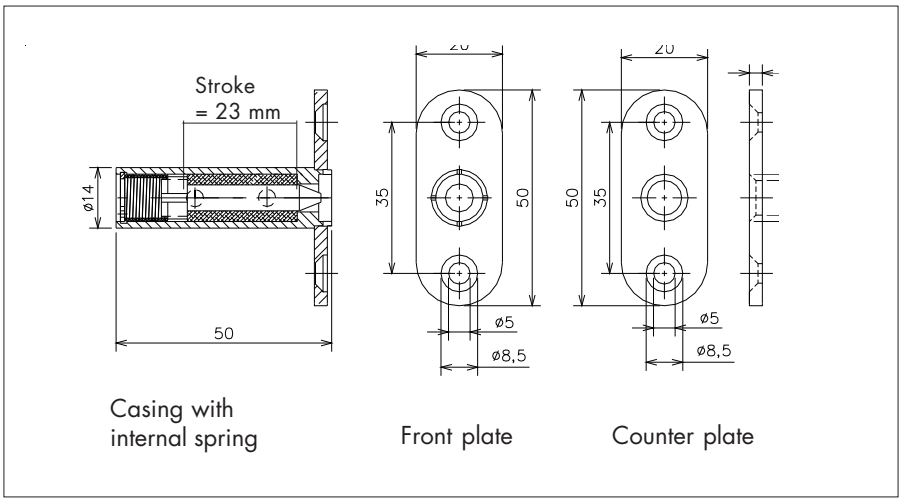
The **H**ot-**L**ocking-**S**afe bolting offers protection for life and material in a simple and unobtrusive way. The bolting is installed in the frame or the door at those places where there is the highest danger of a gap occurring. Normally the bolt is retracted in the casing and locked there by the soldered strut. Only when the surrounding temperature rises to about 600 °C and the HLS bolting has reached about 65 °C the soldered strut melts and the spring in the back of the cylinder can push out the bolt. This fixes the door securely to the frame and the door leaf cannot distort.

IMPORTANT: The HLS bolting may only be installed in accordance with the respective door producer.

Technical Data

Material casing	zinc-plated steel
Material soldered strut	Hotmelt
Melting point	at a surrounding temperature of 600 °C
Spring force	approx. 11 N
Application area	hinged fire protection doors T30 and T60
Door types	timber and steel doors with timber or steel frames
Test	DIN EN 1634-1:2000

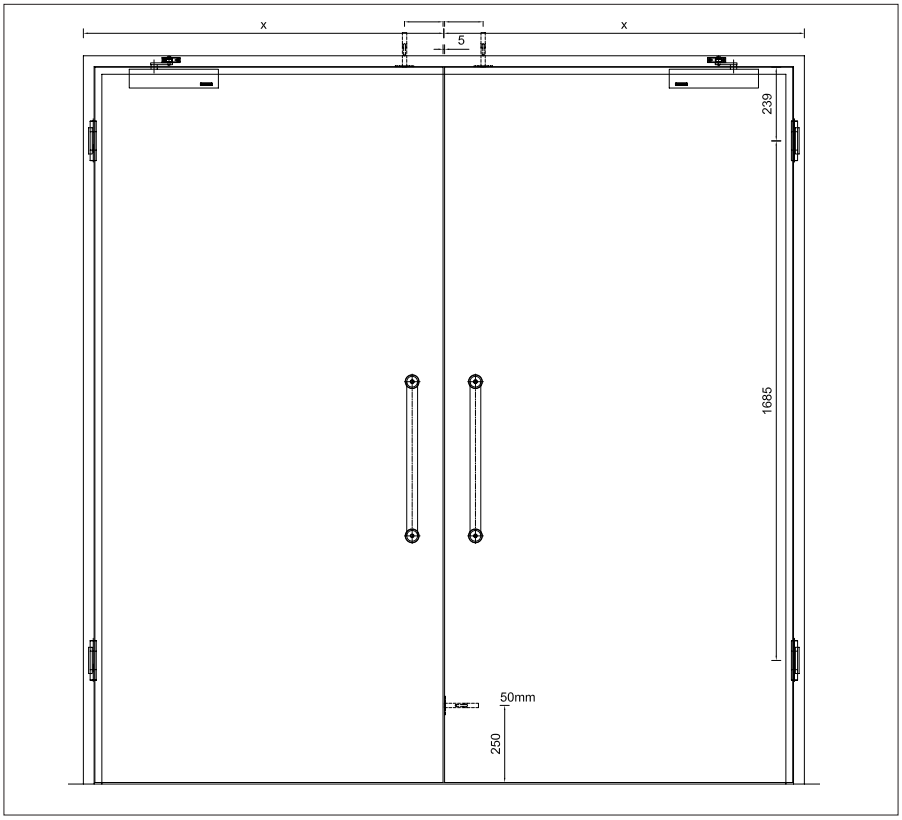
Dimensions TV2003-50



Installation Example

Usually the HLS bolting is installed in the frame. However, it is also possible to fit it into the door leaf. The number and the position have to be decided upon together with the door producer.

It is very important that both HLS bolting and its counter plate are installed exactly opposite each other.



Order Information

HLS bolting TV2003-50, Hotmelt, 23 mm stroke	Part no. 710715
HLS bolting TV2003-60, granulate material, 25 mm stroke*	Part no. 710710

* Only for applications this execution has already been tested for.

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Door Sequence Selectors

For double-leaf hinged fire and smoke protection doors it is mandatory to be equipped with a door sequence selector. The tested DICTATOR door sequence selectors make sure that the door leaves close in the right order and thus reliably prevent the spreading of fire and smoke.

DICTATOR provides two different door sequence selector models:

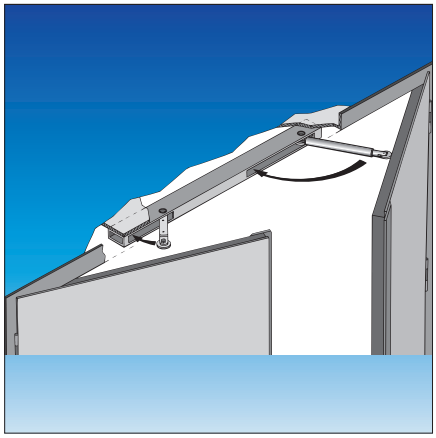
- SR 90 door sequence selector with usual lever arm and support brackets
- SR 2000 door sequence selector with or without electromagnetic blocking of the lever arms

An obligatory accessory for door sequence selectors is the DICTATOR MK 90 pushing flap. It is required, e.g. in situations with panic arising, whenever only the latch leaf is opened or the finally locking leaf is opened just a little. It makes sure the finally locking leaf is always opened that far that the door sequence selector can function correctly.

The DICTATOR door sequence selectors have been tested and approved on hinged fire protection doors with two leaves according to DIN EN 1158.

Product Overview

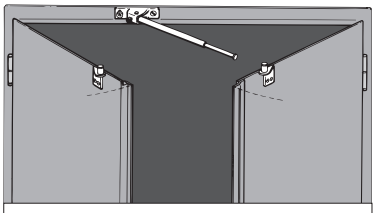
SR 90 door sequence selector	door sequence selector with 2 support brackets
SR 2000 door sequence selector	compact unit without support brackets,
	with/without blocking of the integrated arms
Pushing flap	required accessory for door sequence selectors



Operation SR 90

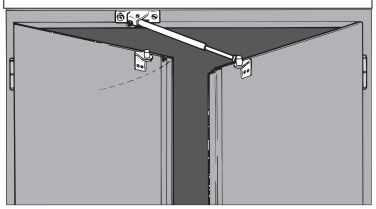
Operation

The DICTATOR SR 90 door sequence selector remains unfolded when only the finally locking leaf is opened. Every time both door leaves are opened the telescopic arm of the door sequence selector SR 90 is automatically set in an upright position by the integrated leg spring.

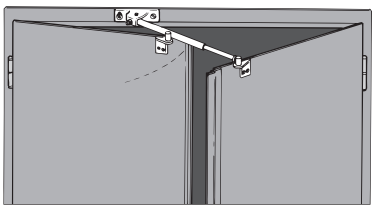


The door sequence selector controls the correct closing sequence of both door leaves:

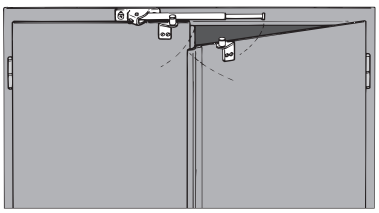
The door leaf to close finally (locking door leaf) hits the door sequence selector's telescopic arm with the pin of the support bracket and is kept in this position ...



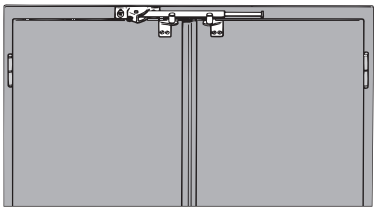
until the latch leaf with support bracket moves laterally across the door sequence selector's telescopic arm and...



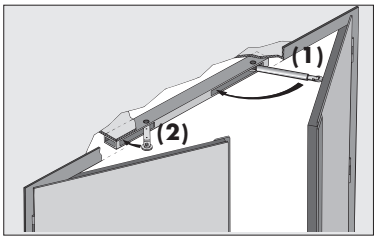
during closing takes the telescopic arm back with it to its closed position. When the telescopic arm lies flat against the door frame, the locking leaf is released and ...



can now close.



Operation SR 2000



As soon as both door leaves open, the SR 2000 door sequence selector's telescopic arm is activated by the integrated traction spring. During closing the active (locking) door leaf, which is required to close last, hits the door sequence selector's telescopic arm (1) with its back and stays in this position until the closing passive leaf (latch leaf) touches the release roller of the small arm (2) and folds in the small arm of the door sequence selector. This also folds in the telescopic arm (1) and sets the active leaf free. Then the active leaf can also close.

If only the active leaf is opened, both SR 2000 door sequence selector arms remain folded in.

The SR 2000 E model will unfold its arms only after an alarm of one of the connected smoke detectors.

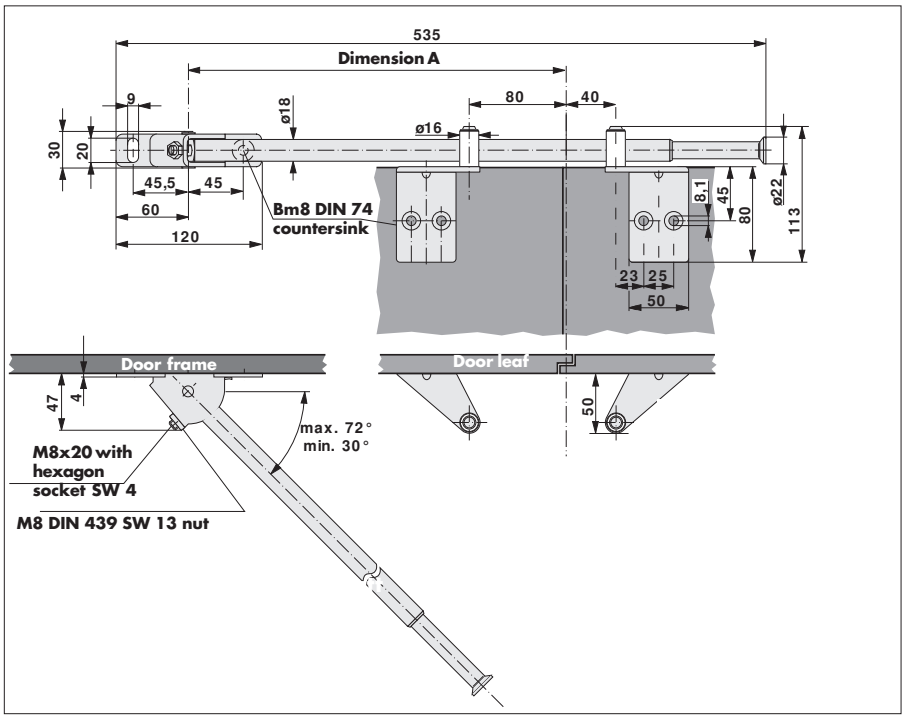
Dimensions, Components Included

By default the SR 90 door sequence selector come packed in individual plastic bags. The components included are:

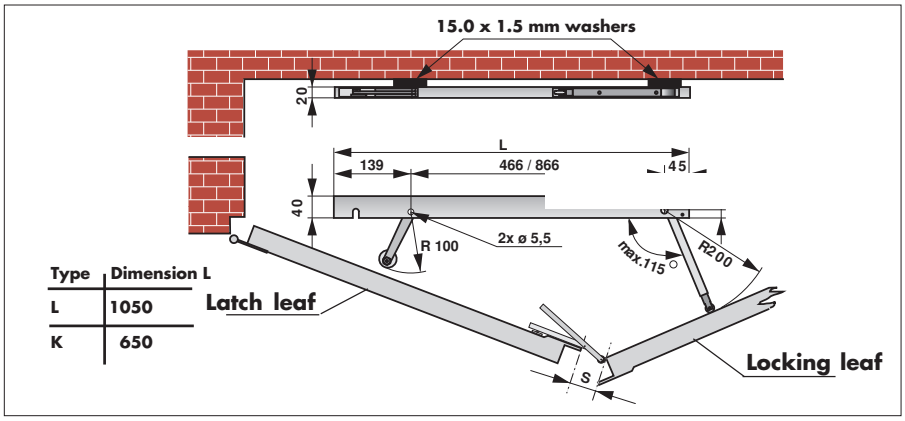
- SR 90 door sequence selector with telescopic arm,
- 2 support brackets with pin and polyamid tube,
- 1 cylinder head stud M8 x 16 DIN 7984,
- 5 hexagon socket screws M8 x 16 DIN 7991.

The SR 2000 door sequence selector (see the illustration on the left) doesn't need any separate support brackets.

Dimensions SR 90



Dimensions SR 2000



Order Information

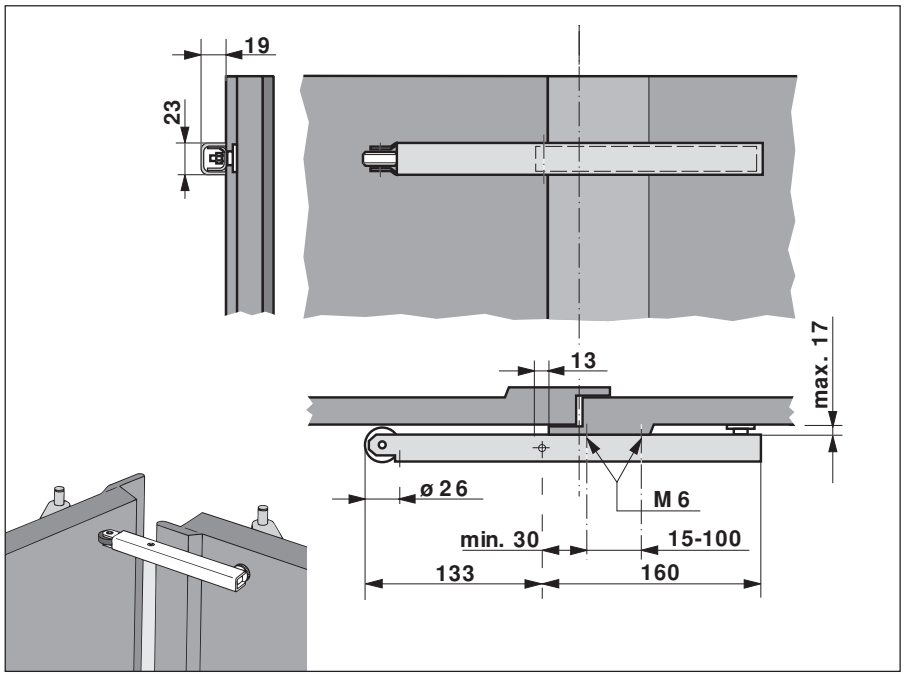
SR 90 door sequence selector, zinc-plated, with accessories	part no. 500420P
SR 2000 L door sequence selector (long execution)	part no. 500430
SR 2000 EL door sequence selector (with magnetic locking)	part no. 500431
SR 2000 K door sequence selector (short execution)	part no. 500435
SR 2000 EK door sequence selector (with magnetic locking)	part no. 500436

Pusing Flap

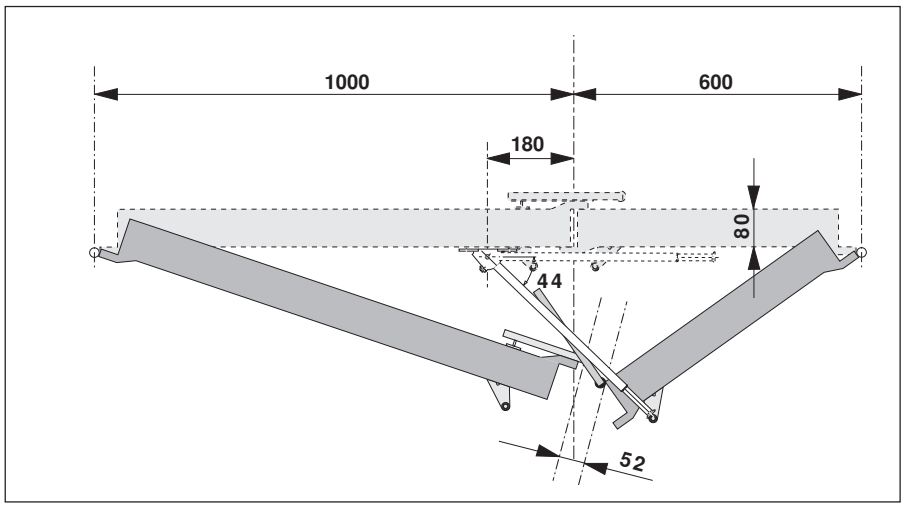
The DICTATOR MK 90 pushing flap assures that doors with two leaves do not get jammed, if the latch leaf is opened first, e.g. in situations with panic arising. Furthermore the correct functioning of a door sequence selector is only guaranteed when the locking leaf reaches a certain opening angle. If the latch leaf is opened first, the pushing flap pulls along the locking leaf until the door sequence selector can support it. This ensures the door sequence controller functions properly and the door leaves close in the correct order. Therefore the pushing flap is indispensable for two-leaved emergency exit doors.

The DICTATOR MK 90 pushing flap has been tested on fire protection doors with two leaves.

Dimensions



Installation on Doors with Asymmetric Leaves



Due to the length of the hinged lever the DICTATOR MK 90 pushing flap can also be used on asymmetric doors. We gladly will calculate the correct installation position of the door sequence selector for you.

Order Information

MK 90 pushing flap, zinc-plated	part no. 500440

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