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## Fire Door Control Solutions

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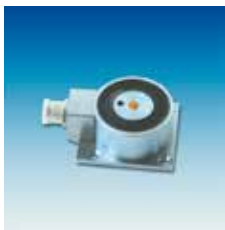
**Smoke Detectors**  
**- 07.018.00**

**Pages 07.003.00**



**Power Packs**  
**Control of Signals**  
**Ex-Proof Hold-Open Systems**

**Pages 07.017.00**  
**- 07.028.00**



**Electromagnets**  
(Bar Magnets are to be found in  
the chapter Access Control Systems)

**Pages 07.029.00**  
**- 07.058.00**



**Counter Plates**

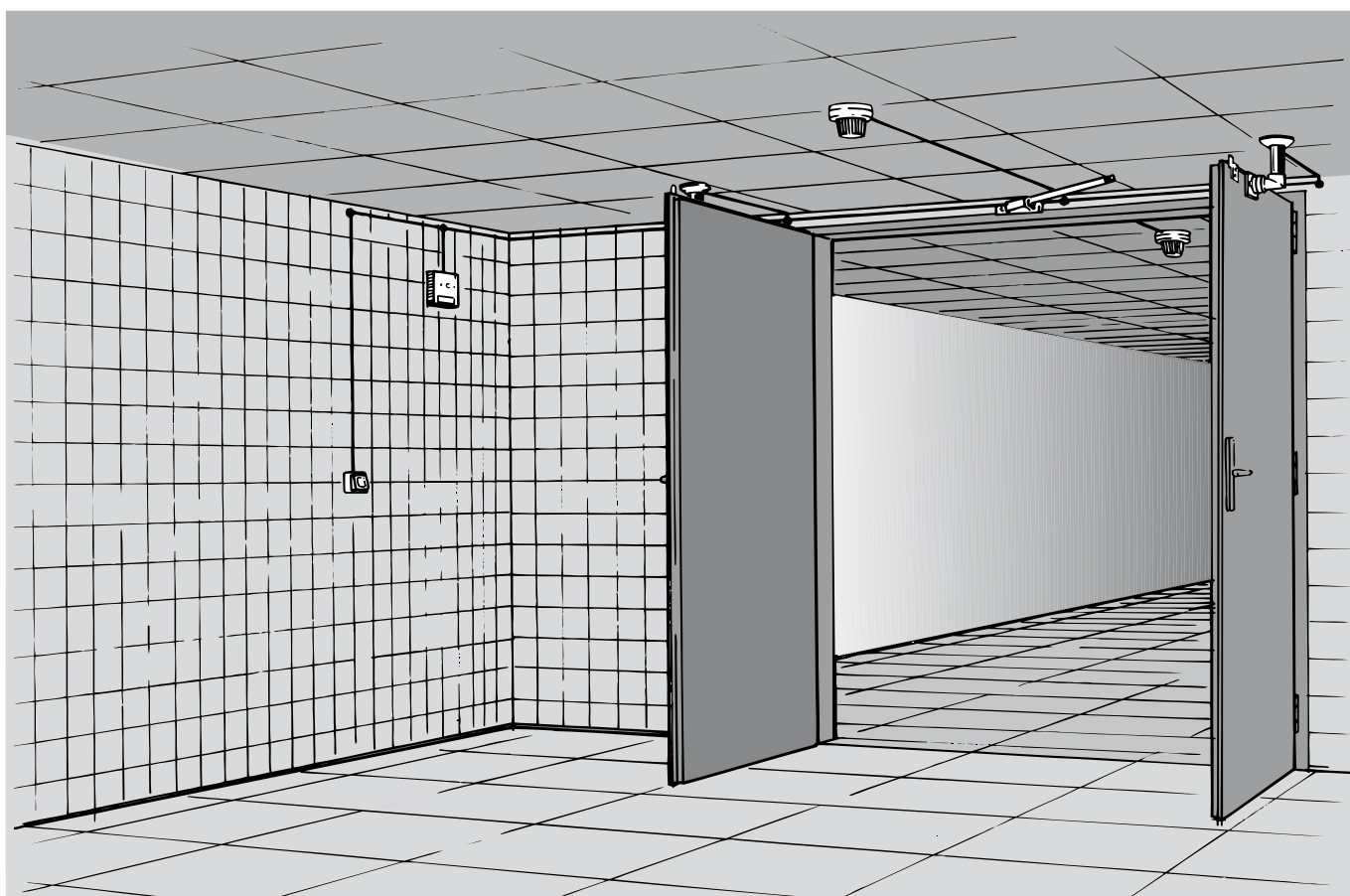
**Pages 07.059.00**  
**- 07.064.00**



**Bracket for Magnets**  
**Hand Switch**  
**HLS Thermal Bolting**  
**Door Sequence Selectors**

**Pages 07.065.00**  
**- 07.074.00**

## Components of a Hold-Open System



### Components

Power pack	Page 07.017.00 et sqq.
Smoke detectors	Page 07.003.00 et sqq.
Electromagnets	Page 07.029.00 et sqq.
Counter plates	Page 07.059.00 et sqq.
Hand switch	Page 07.067.00 et sqq.
Door sequence selector	Page 07.071.00 et sqq.

**State 07/2017**

## 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 additionally included temperature sensor in the smoke detector reacts to a temperature higher than 65 °C.

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.

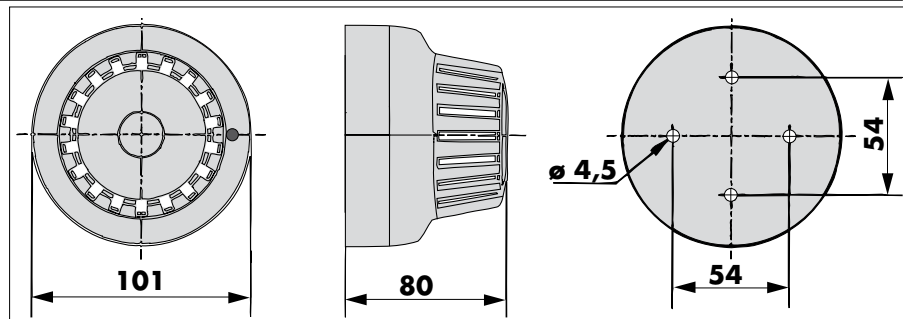
The RM 2000 smoke detector has been **approved** for the use in hold-open systems by the Institute for Building Engineering in Berlin/Germany. **Among others** it is included in the following approvals: Z-6.5-1903, Z-6.5-1707.



### Technical Data

Supply voltage	24 VDC (+15 %, -10 %)
Power consumption	35 mA
Alarm signal 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 or smoke protection closures, observe during installation the advice on how to arrange the detectors on wall openings given in the respective general approval of the building authorities.

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).

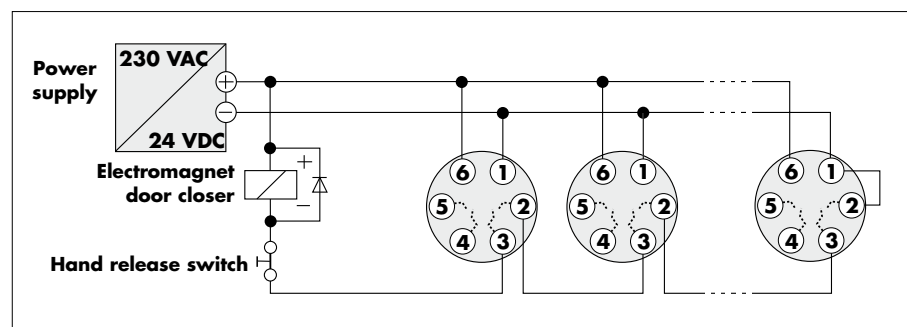
Insert the smoke detector into the socket so that the light diode coincides with the mark in the socket. Then turn it to the right for about 15 mm until it snaps in. It is now ready for operation.

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

### Advices:

- Remove the dust protection bag only when the installation is terminated.
- For the cable entry the included membrane grommet has to be used.
- Protect the smoke detector from dust, colour mist and moisture to prevent malfunction.

## Connection Example



## Order Information

RM 2000 smoke detector, contact "b" opens upon alarm	part no. 040500
RM 2000 smoke detector, contact "b" closes upon alarm	part no. 040502
Socle for RM 2000 smoke detector	part no. 040540

## Accessories

Bracket for wall mounting	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

## 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 building authorities** (Institut für Bautechnik in Berlin) for the use in hold-open systems. Among others it is included in the following approvals: Z-6.5-1903, Z-6.5-1707.

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.

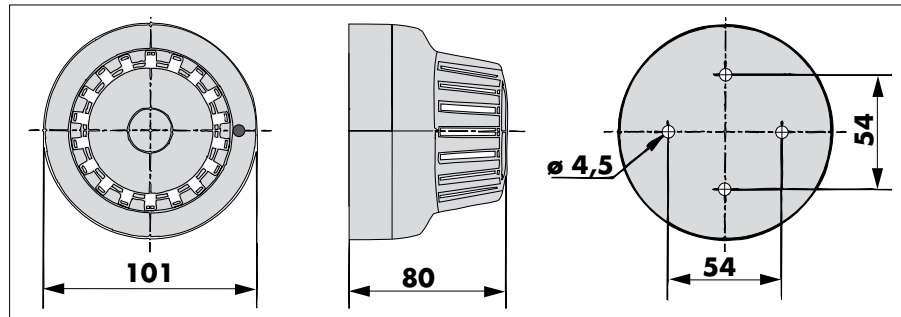
The alarm signal can be passed on through two separate potential free relay contacts. Additionally, a clearly visible red diode on the heat detector indicates the alarm system's operational situation.



### 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

## Dimensions



## Installation

When using the heat detector on fire or smoke protection closures, please observe during installation the advice on how to arrange the detectors on wall openings given in the respective general approval of the building authorities.

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).

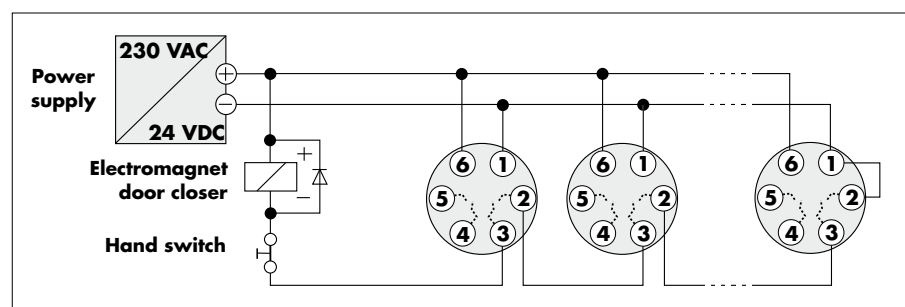
Insert the heat detector into the socket so that the light diode coincides with the mark in the socket. Then turn it to the right for about 1.5 cm until it snaps in. It is now ready for operation.

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

### Advices:

- Remove the dust protection bag only when the installation is terminated.
- For the cable entry the included membrane grommet has to be used.
- Protect the heat detector from dust, colour mist and moisture to prevent malfunction.

## Connection Example



## Order Information

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

## 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

## **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 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 **European Standard EN 54**.

They have been **tested** as tripping devices for hold-open systems and are **approved** together with DICTATOR electromagnets by the building authorities. The detectors are **among others** included in the following approvals: Z-6.5-1903, Z-6.5-1707.



### **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+)





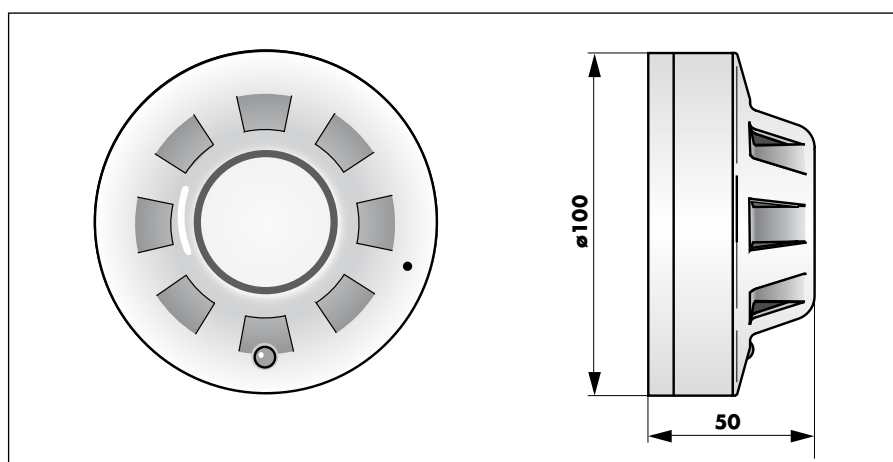
## Dimensions

All detectors of the 3000+ range fit into the RS 3000 relay base, i.e. if necessary, smoke detectors can be replaced with a **heat detector** from the 3000+ range. However, please always **observe** during installation **the relevant regulations concerning the arrangement of detectors on openings in walls of the respective approval of the building authorities.**

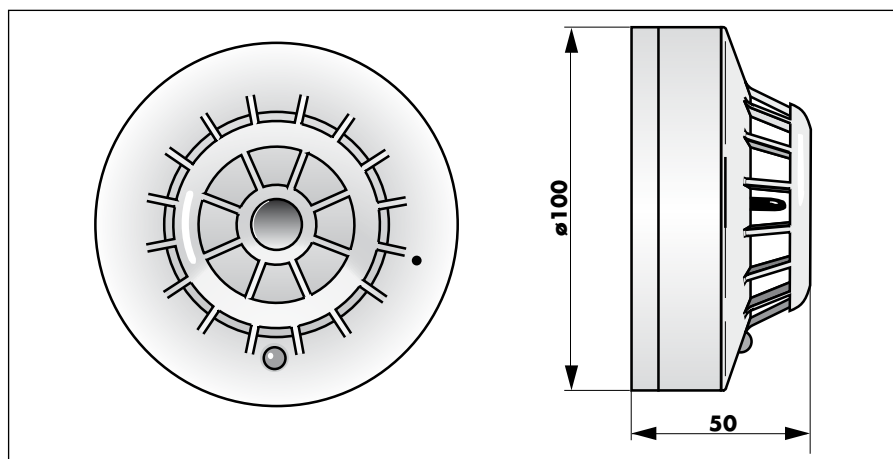
To protect the sensing chamber from pollution during construction work, all detectors are delivered with a red **protection cap** which must be removed when the hold-open system is put into operation.

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

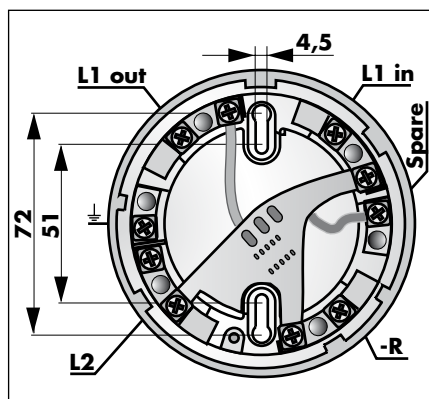
### 1. Optical Smoke Detector



### 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.



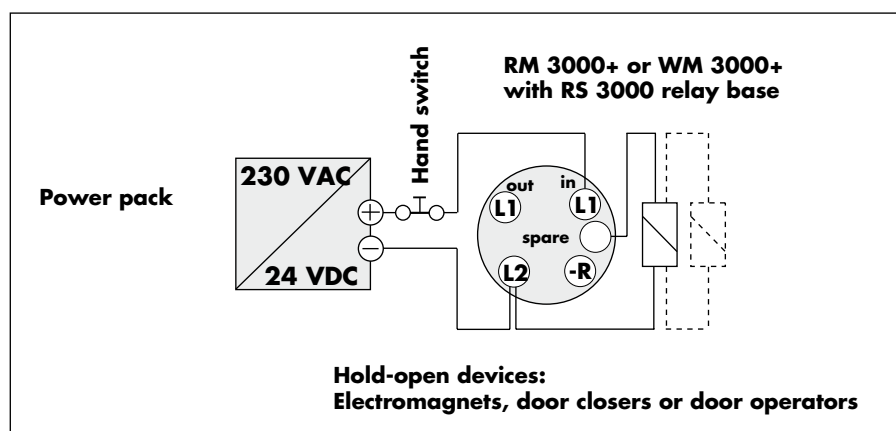


## RM 3000+ Smoke Detector, WM 3000+ Heat Detector Easy to Connect, with Integrated Relay

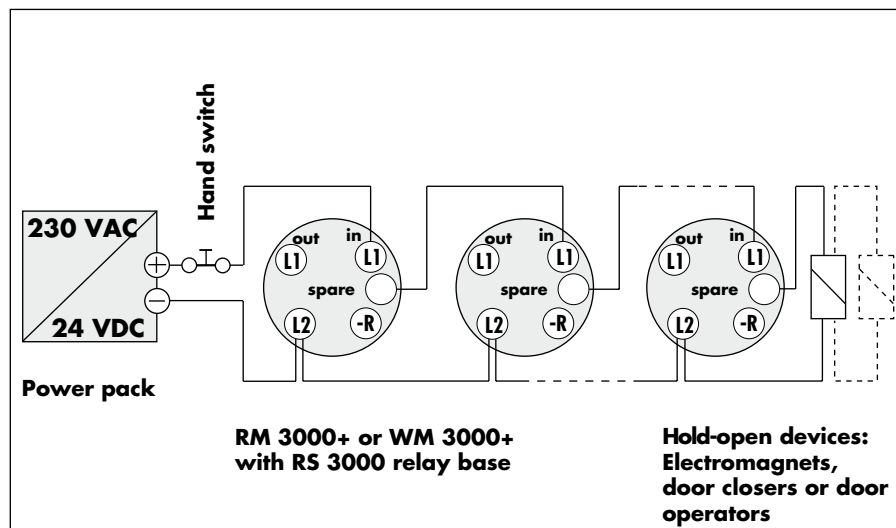
Connect the required number of smoke detectors (see the respective relevant approval of the building authorities) to one of our power packs. When **choosing the power pack** please make sure that the total power consumption of all connected detectors does not exceed the supply current of the power pack. 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.

Attention: The functioning of hold-open systems must be tested every month - provided no other period is given in the approval document - and they require annual maintenance by authorized personnel.

**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.



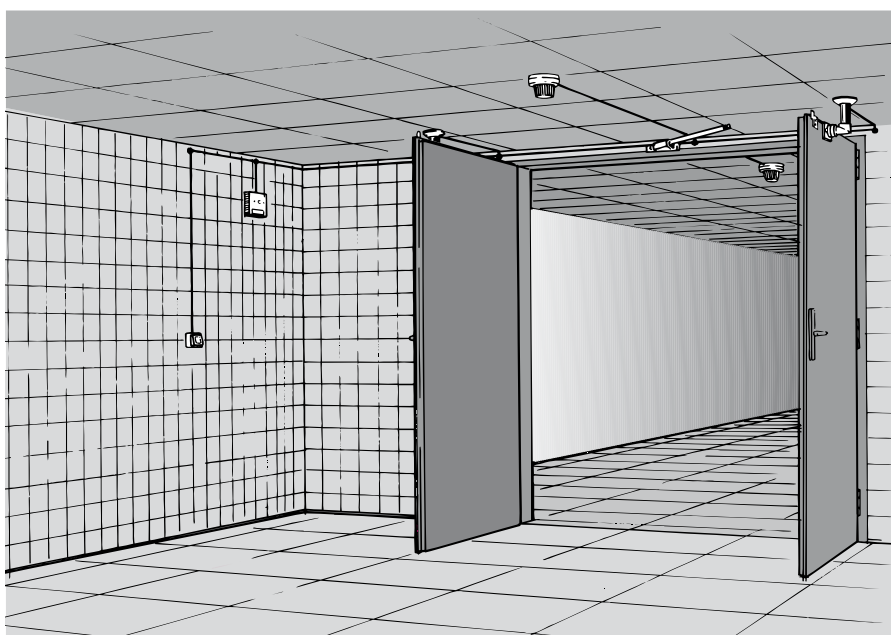
## RM 3000+ Smoke Detector, WM 3000+ Heat Detector

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.

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
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## Further Accessories

Power packs (450 mA, 800 mA)	see page 07.017.00
Electromagnets for installation on wall/ceiling/floor	see page 07.029.00
Hand switch for manual release of door	see page 07.069.00
Sequence controllers	see page 07.073.00
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

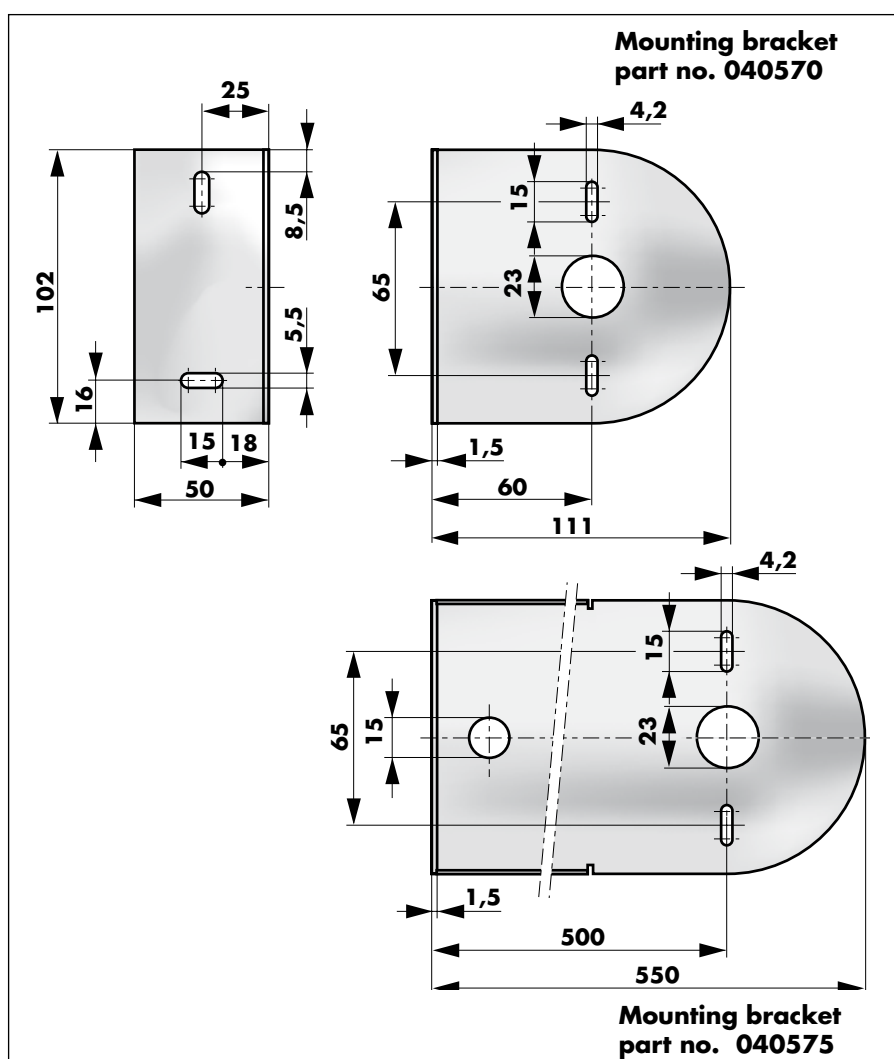


## Mounting Bracket for RM 2000, RM 3000+ and WM 3000+

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.

According to the demands of the Deutsches Institut für Bautechnik in Berlin regarding the installation of fire detectors, in exceptional cases it is allowed to replace a detector on the ceiling by a detector on the wall (see page 07.014.00 et sqq.). However, the horizontal distance between the wall and the axle of the detector must be 0.5 m. The mounting bracket, part no. 040575 meets this demand. 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 550 mm	part no. 040575



## Advice for the Installation and Maintenance of DICTATOR Hold-Open Systems

In Germany apply for the installation and maintenance of hold-open systems the directives included in the respective approval.

On the following pages we present a summary of the most important regulations. For more information please see the respective approval which you also can find on our website [www.dictator.de](http://www.dictator.de).



## Mounting

For the requirements of mounting fire detectors you have to consult the respective approval of the building authorities. The following diagrams will help you in choosing the correct number/type of detectors.

When in the following "**ceiling detectors**" are required, they have to be mounted directly below the lower surface of the ceiling above the opening in the wall. The horizontal distance of the detectors to the wall with the opening to be protected, must be at least 0.5 m and at most 2.5 m.

When in the following a "**lintel detector**" is required, it has to be mounted with its bracket on the wall above the wall opening, at the most 0.1 m above the lower edge of the lintel.

For calculating the required number of detectors it is generally assumed that one **detector can cover a range the boundaries of which are at a distance of 2 m from the detector**. If the opening width exceeds 4 m, additional detectors or detector pairs are required to cover the complete width.

If the distance between the upper edge of the wall opening and the ceiling is more than 5 m, the corresponding ceiling detectors can be replaced by detectors being mounted on the wall on cantilevers at least 3.5 m above the wall opening. The horizontal distance between wall and the centre of the detector has to be 0.5 m.

In the counting you may not include pendular detectors and those fixed to cantilevers on differing places.

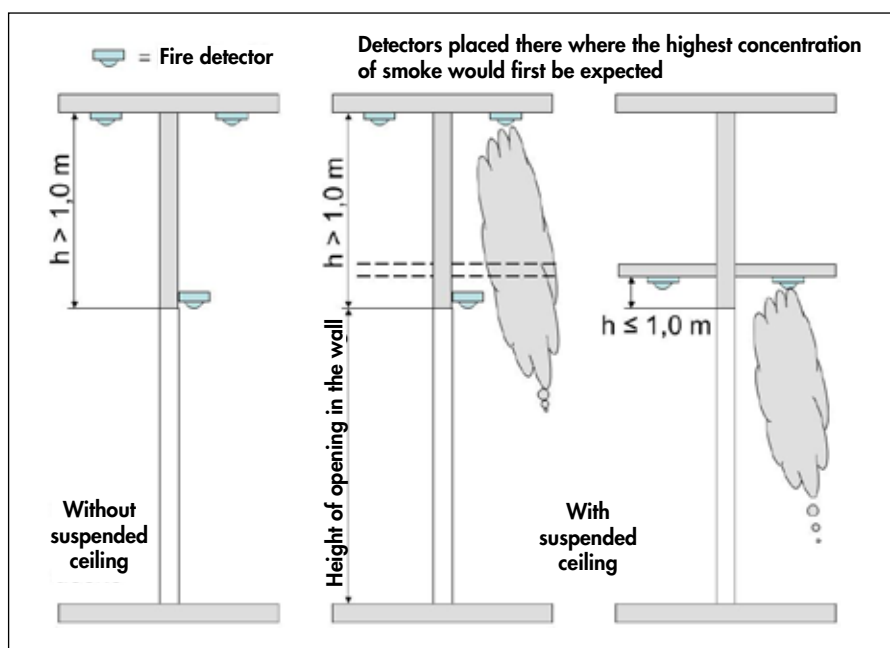


Diagram 1: Decisive height of the lower surface of the ceiling

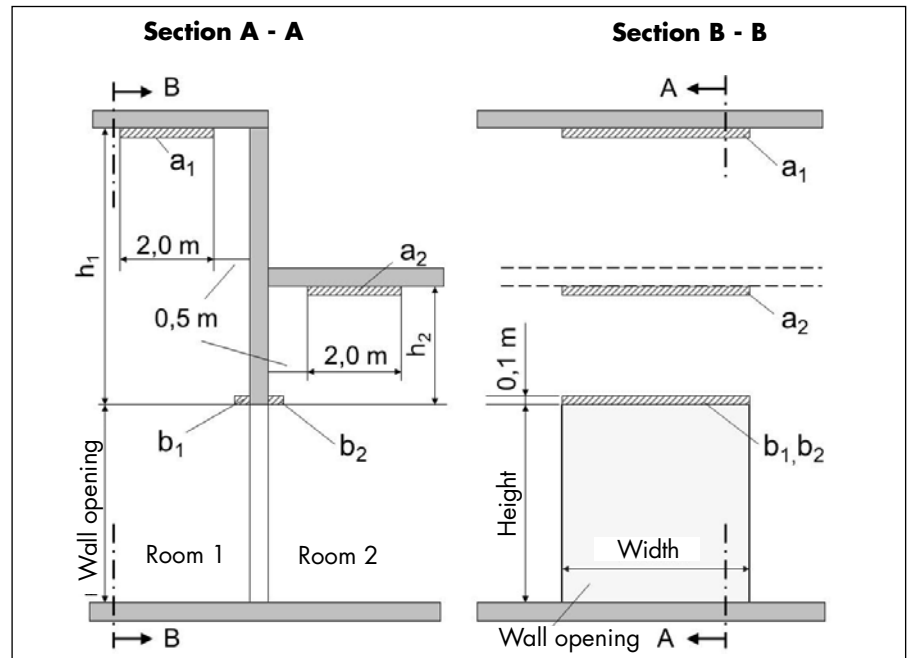


Diagram 2: Installation areas

Line	Height of ceiling above lower edge of lintel	Installation areas (b = b1 or b2)	Min. number of detectors required*)
1	$h_1$ and/or $h_2 > 1,0 \text{ m}$	$a_1 + a_2 + b$	2 ceiling and 1 lintel detectors
2	$h_1$ and $h_2 \leq 1,0 \text{ m}$	$a_1 + a_2$	2 ceiling detectors
3	as line 2, but swing door with door width up to 3.0 m	b	1 lintel detector or 2 ceiling detectors

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

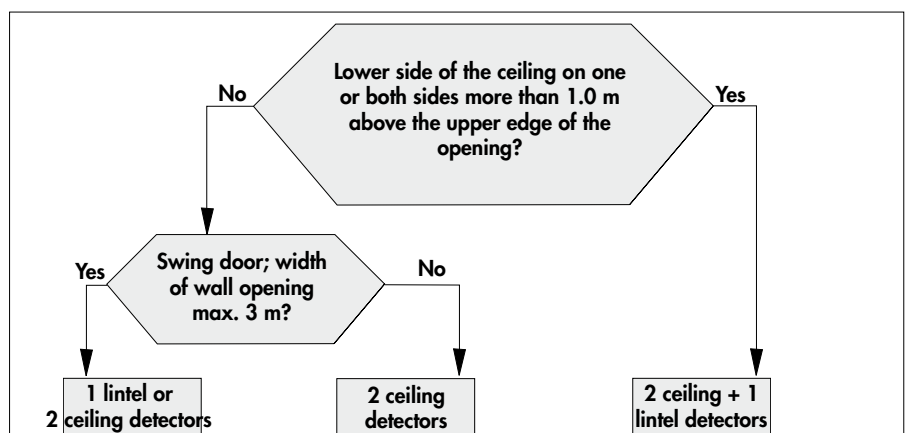


Diagram 3: Decision diagramm



## Electrical Installation of the Hold-Open System

### Exerpt from the General Approval of the Building Authorities (from December 2016)

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

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

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

All customary **cables** can be used. In areas where high electromagnetic interferences occur, we recommend to shield the cables.

Recommended cross section of the cables: 0.6 - 0.8 mm<sup>2</sup> (depending on the length of the line)

## Other Directives

For more directives on installation, use, maintenance and functional tests, please **see the approval of the building authorities taken as a basis and the testing and maintenance instructions for DICTATOR hold-open systems.**

**The documents can be found under [www.dictator.de](http://www.dictator.de). The approvals of the building authorities also contain all admissible device combinations.**

## Periodic Inspection

The operator has to make sure the hold-open system is permanently in working order and its proper functioning must be tested on a monthly basis - provided no other period is given in the approval document. Every instructed person can perform this functional test according to the inspection specifications.

The operator is bound to carry out or to have carried out a check whether all devices cooperate properly and failure-free and a maintenance service at least once a year. This annual check/maintenance may only be performed by a professional or a person trained for this purpose.

## Operational Life

To ensure the correct functioning of the hold-open system, the DICTATOR smoke and heat detectors have to be replaced after a maximum of 8 years of operational life. In Germany the DIN 14677 regulates the replacement obligation of fire detectors in hold-open systems.

## 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 are **approved by the building authorities** for the use in hold-open systems. The power packs are **among others** included in the following approvals: Z-6.5-1903, Z-6.5-1707.

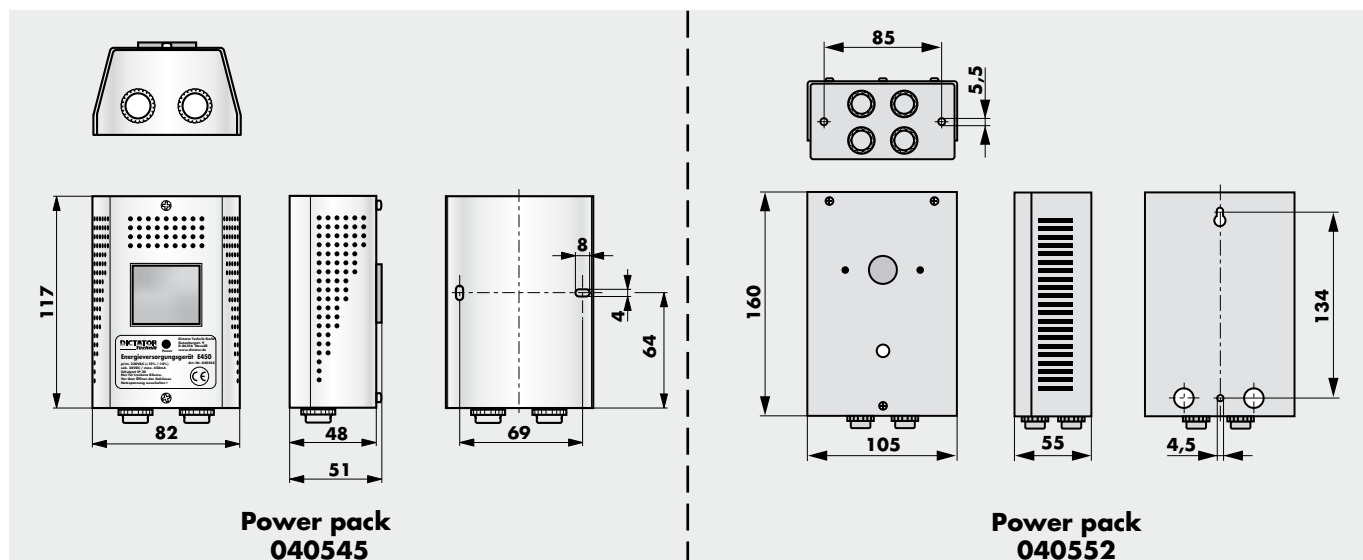
The production quality of the power packs is surveyed by an accredited testing institute.



### 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 varnished sheet steel

## Dimensions



## Installation

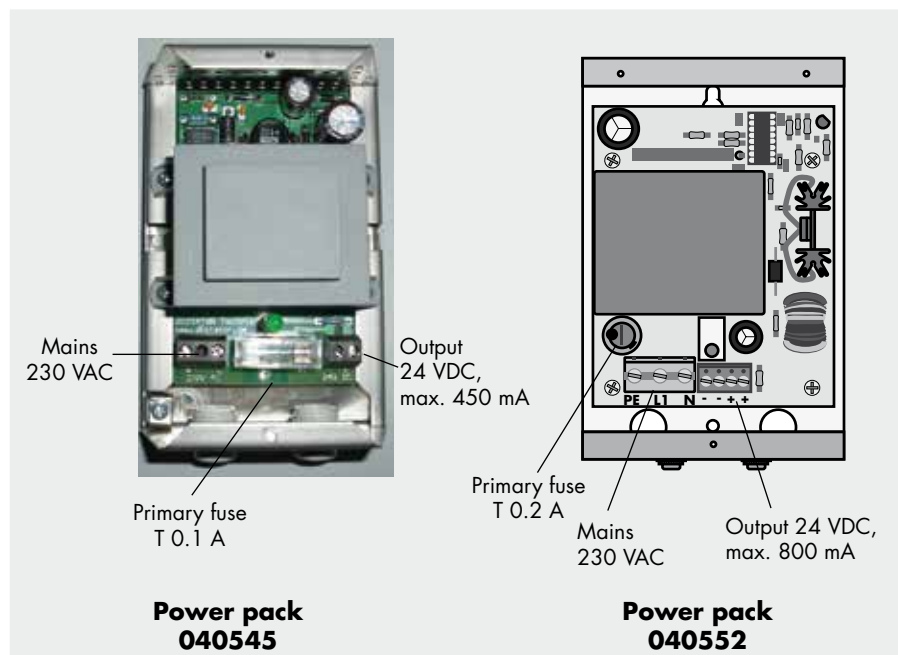
The power packs are only suitable for dry rooms.

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!**



## Order Information

Power pack 24 VDC/450 mA

part no. 040545

Power pack 24 VDC/800 mA

part no. 040552

## S400 Signal Control for Fire Protection Doors

Acoustic and optical warning signals are especially used for motorized doors which have to obey the demands of the EN 12604. An acoustic signal (as the case may be an optical one) is also prescribed for fire protection doors which in the event of an alarm close by means of a mechanical device (e.g. counterweight) without limited force.

The S400 signal control has 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 power of the hold-open system is cut and the door starts to close. An integrated time control unit will switch off the signallers after an adjustable time.

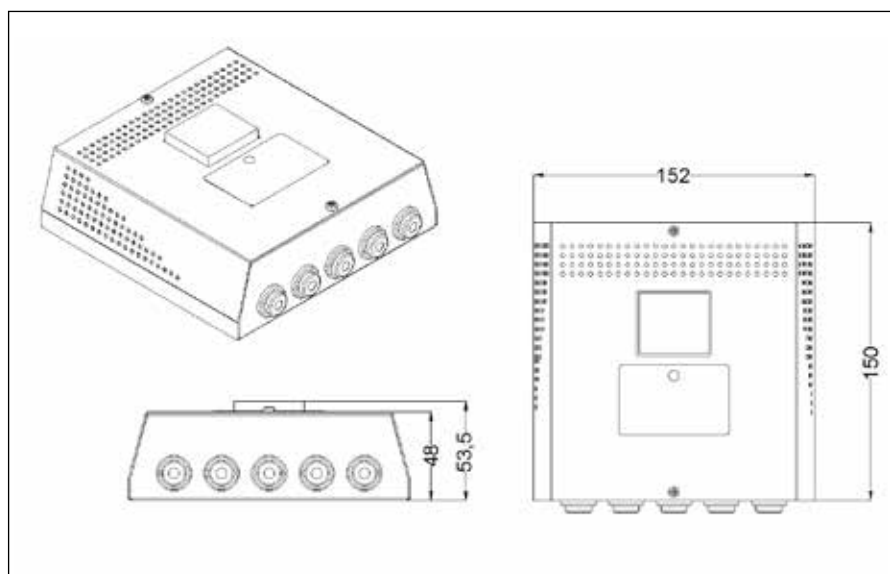
Existing installations can be upgraded with the signal control.



### 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 demands. The European ATEX directives (first the EN 94/9/EG and then the directive 2014/34/EU) brought about the regulations becoming considerably more rigorous.

DICTATOR furnishes a hold-open system especially for hazardous areas that meets the requirements of the ATEX directive 2014/34/EU. The hold-open system has been tested and is approved by the Institute for Building Engineering in Berlin (approval no. Z-6.5-1872).

Two types are 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. Special models with pressure capsulated casings for the hazardous area are available on demand.

The valid regulations and instructions relating to the protection in hazardous areas must strictly be observed. The installation of the components and operating elements must make sure that they cannot be damaged.



### Technical Data

Use	hazardous areas of zones 1 and 2
Operating temperature	-20 °C to +40 °C
Ignition protection type fire detectors	Ex II 1G Ex ia II C T5 (at max. 40 °C) only in combination with a safety barrier
Ignition protection type electromagnets, model with cable	Ex II 2G Ex mb IIC T6 Gb or Ex II 2D Ex mb IIIC T85°C Db
Ignition protection type electromagnets, with terminal box	Ex II 2G Ex mb e IIC T6 Gb or Ex II 2D Ex mb e IIIC T85°C Db



## Components of a Hold-Open System without Door Operator

Fire protection doors that have to stay open, e.g. because of the requirements of the operating procedure, demand 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 the case of hold-open systems in hazardous areas, according to German regulations, an additional gas warning system with a potential-free NC-contact is required to release the hold-open system as well.

## Components

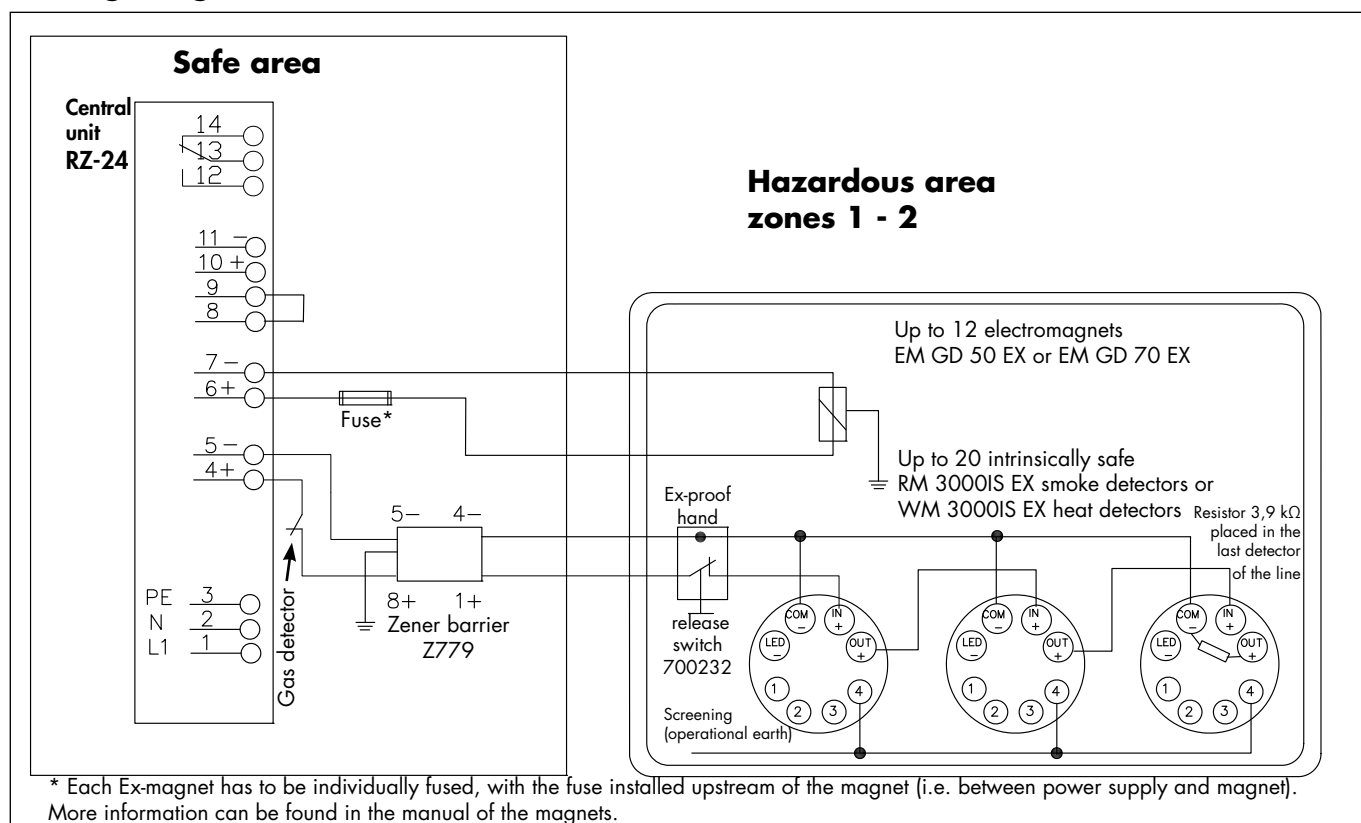
The explosion-proof DICTATOR hold-open system is made up of maximum 20 smoke or heat detectors and up to 12 explosion-proof magnets (ATTENTION: consider the maximum output load of the RZ-24 central!). The explosion-proof magnet is available in 2 different forces.

The RZ-24 central and the safety barrier (Zener barrier) are installed outside the hazardous area. Special models with pressure capsulated casings for the hazardous area are available on demand.

The cable recommended for the wiring within the hazardous area is an Ölflex cable 2x0,75 mm<sup>2</sup>, max. length 100 m.

- RZ-24 central unit with power supply
- Shunt safety barrier: Zener barrier Z779
- RM 3000IS EX smoke detector (or WM 3000IS EX heat detector) with base
- Resistor 3.9 kΩ (to be placed in the last detector of the line)
- Explosion-proof magnet (for zones 1 + 2 see p. 07.043.00 et sqq., only for zone 2 see p. 07.041.00)
- Hand release switch (part no. 700232)
- Gas warning system (to be provided by the customer, requires for tripping a potential-free contact with the following switching capacity: 24 VDC/100 mA)

## Wiring Diagram







### 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. In explosion-proof hold-open systems the magnets are generally installed only in the OPEN position of the door and are not integrated in the door operator. In the case of an alarm it has absolutely to be made sure that the door closes and is not blocked due to an error of the control system. Therefore, in such a case, the relay integrated in the RZ-24 central automatically switches off the control system of the ex-proof door operator (see diagram below).

### Components

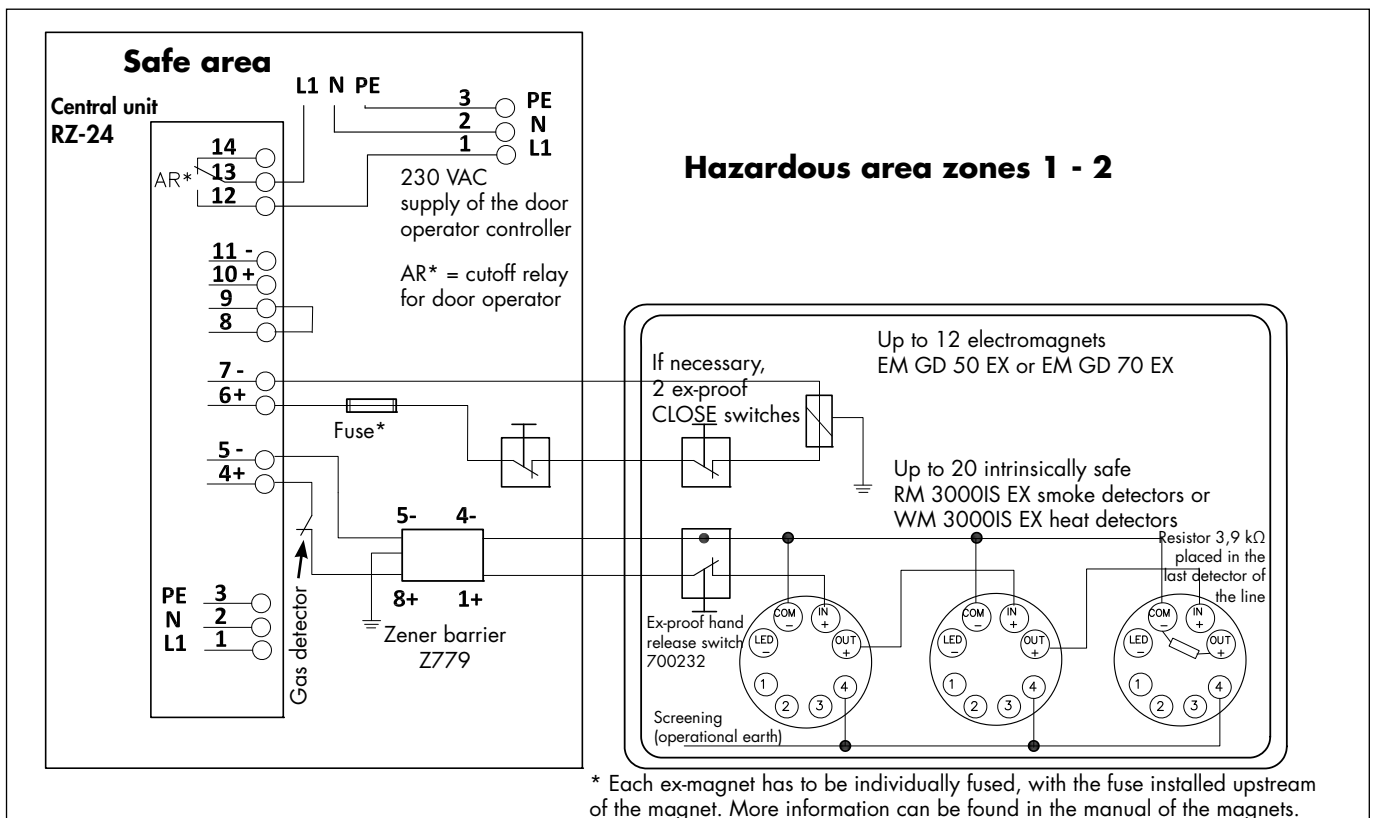
The door operator used to open the fire protection door is not shown in the list of the components. Which door drive should be chosen depends on the type of door, the required forces, functions etc.

The RZ-24 central unit and the shunt safety barrier are installed outside the hazardous area. Special models with pressure capsulated casings for the hazardous area are available on demand.

The cable recommended for the wiring within the hazardous area is an Ölflex cable 2x0,75 mm<sup>2</sup>, max. length 100 m.

- RZ-24 central unit with power supply
- Shunt safety barrier: Zener barrier Z779
- RM 3000IS EX smoke detector (or WM 3000IS EX heat detector) with base
- Resistor 3.9 kΩ (to be placed in the last detector of the line)
- Explosion-proof magnet (for zones 1 + 2 see p. 07.043.00 et sqq., only for zone 2 see p. 07.041.00)
- Hand release switch (part no. 700232)
- Gas warning system (to be provided by the customer, requires for tripping a potential-free contact with the following switching capacity: 24 VDC/100 mA)
- If necessary, ex-proof CLOSE switches for the door

### Wiring Diagram





## RZ-24 Central Unit with Power Supply and Tripping Device

In ex-proof hold-open systems the RZ-24 central unit evaluates the fire detectors. In addition to the alarm in case of a fire, it also registers disturbances like e.g. a short circuit or a wire break in the system. The alarm as well as disturbances can also be signalled acoustically by an integrated horn (adjustable in the RZ-24).

The central features an integrated hand release switch. After an alarm the system is reset in the central as well.

The RZ-24 central has been tested and is approved by the Deutsches Institut für Bautechnik (German institute for building engineering).

## Functions

- Manual release of the hold-open system by the integrated or an additionally connected hand release switch (mounted in the immediate vicinity of the fire door)
- Tripping the hold-open system by the connected fire detectors or by the potential-free contact of a fire alarm central
- RESET of the complete hold-open system: first use the hand release switch to reset the fire detector and then the RESET switch on the RZ-24 central to reset the whole system
- Integrated excess-current protection: If too many consumers are connected, the power supply automatically cuts off.
- Potential-free contact for signalling the tripping, e.g. for relaying the alarm to a facility management system, an additional warning device etc. If a door operator forms part of the hold-open system, the contact is used to cut the power supply of the door operator in case of an alarm, to allow the mechanic closing of the door (door closer, closing spring or counterweight).
- Status indication for normal operation and alarm on the cover of the central

## Indication and Operating Elements of the RZ-24

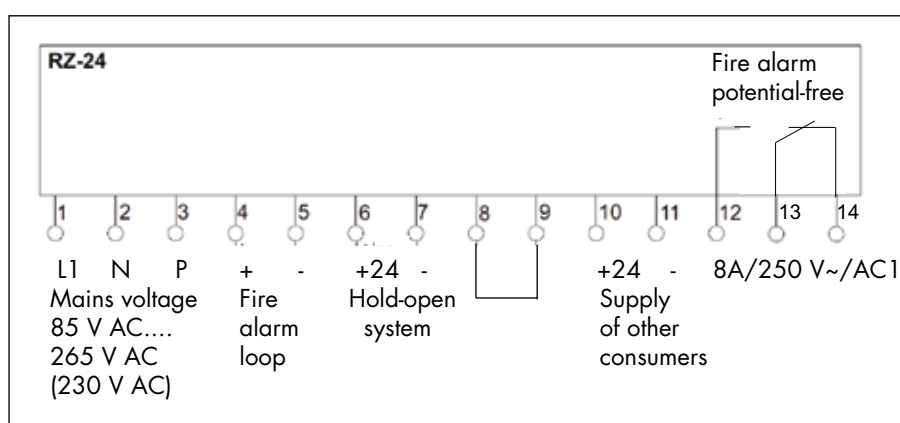
- Integrated hand release key (1)
- Integrated RESET key (2)
- 2 LEDs for status indication on the front panel (3):  
LED green "operation" (normal operation)  
LED red "alarm" (error or alarm)
- Key quitting horn (4):  
switches the horn off after an alarm.



## Inputs/Outputs

The RZ-24 central features inputs for the mains supply and the fire alarm loop. Outputs are available for powering the hold-open system and additional consumers. Besides this is also integrated a potential-free relay for relaying the tripping.

## Block Diagram



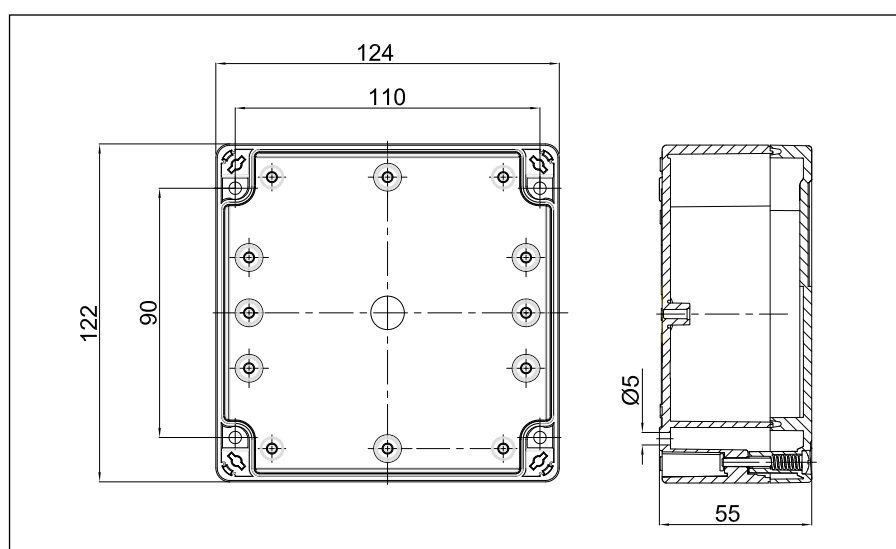


### RZ-24 Central Unit - cont.

If necessary, the RZ-24 central unit can also be provided with an integrated or a separate emergency power supply. This allows to bridge a 230 V power supply failure up to 12 minutes - depending on the consumption of the connected smoke detectors, electromagnets and other consumers.

**Important notice:** When determining the number of required fire detectors, it has to be taken into consideration that an additional fire detector has to be installed above the RZ-24 when the central unit is not placed within the detection range of one of the detectors mounted on the door!

### Dimensions Casing



### Installation

The RZ-24 central unit must be installed outside the hazardous area. Special models with pressure capsulated casings for the hazardous area are available on demand.

### Technical Data

Dimensions	122 x 124 x 55 mm (height x width x depth)
Supply voltage	85 VAC - 265 VAC, 50/60 Hz
Power consumption	about 30 W
Additional switching contact	potential-free contact 8 A/<250 V~/AC1 (relay fallen off = tripping)
Secondary output voltage	24 VDC $\pm 5\%$
Secondary total load	0.9 A (supply of fire detectors, electromagnets and other consumers)
Operating temperature	-30 °C to +40 °C
IP rating	IP 64 when IP 64 cable inlets are used
Casing	plastic casing in ABS, light grey, with 4 threads M16 for cable inlets
Emergency power supply	on demand, up to max. 12 minutes (at a consumption of 70 mA)

### Order Information

RZ-24 central unit with power supply and tripping device	part no. 040553
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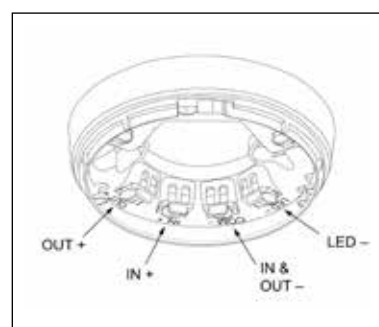
## Smoke and Heat Detectors RM 3000IS EX / WM 3000IS EX

Fire protection components installed in hazardous areas require in addition to the approval for fire protection a test and a certificate confirming their compliance with the ATEX directive. Both the smoke detector RM 3000IS EX and the heat detector WM 3000IS EX meet these requirements.

The smoke detector RM 3000IS EX is a stray light detector with integrated thermo sensor. The smoke detectors RM 3000IS EX and the heat detectors WM 3000IS EX are intrinsically safe. In hazardous areas they may only be used in combination with the Zener barrier described on the next page.

## Dimensions

Smoke detector RM 3000IS EX with base	Ø 100 mm height 60 mm
Heat detector WM 3000IS EX with base	Ø 100 mm height 50 mm



## Installation

The wiring is done in the base S 3000IS EX. In the last detector the 3.9 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	polycarbonate / 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 3.9 kΩ	part no. 040893



### Zener Barrier Z779

A shunt safety barrier, the Z779 Zener barrier, must be placed in between the RZ-24 central unit and the intrinsically safe smoke detectors installed in the hazardous area. If the maximum admissible voltage is exceeded, it prevents that too high energies occur in the hazardous area which could ignite explosive gases or vapours.

The Zener barrier Z779 has been tested and is certified according to the requirements of the European ATEX directive 2014/34/EU (approval no. BAS 01 ATEX7 005).

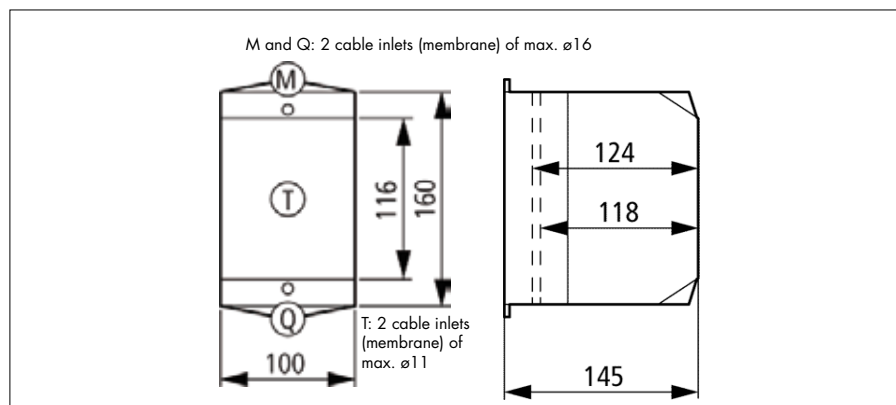
### Functioning

The shunt safety barrier contains several diodes which are connected in reverse direction. If the voltage in the safe area exceeds the maximum voltage admissible for these diodes, they start to conduct current and release the fuse of the Zener barrier. This way the transfer of too high energies to the hazardous area is prevented.

The Zener barrier **must** be installed outside the hazardous area. Special models with pressure capsulated casings for the hazardous area are available on demand.

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

### Dimensions Casing CI-K



### Technical Data

Characteristics Zener barrier Z779	2-channel, DC version, positive polarity
Supply voltage	max. 27 VDC
Fuse rating	50 mA
Series resistance	min. 301 $\Omega$ /max. 327 $\Omega$
Number of connectable ex-proof detectors	max. 20 pieces of intrinsical safe detectors
IP rating	IP 20 / casing IP 65
Operating temperature	-20 °C to +60 °C
Dimensions Zener barrier	12.5 x 115 x 110 mm
Material casing	glassfiber reinforced polycarbonate
Colour of the casing	bottom black RAL 9005, upper part grey RAL 7035

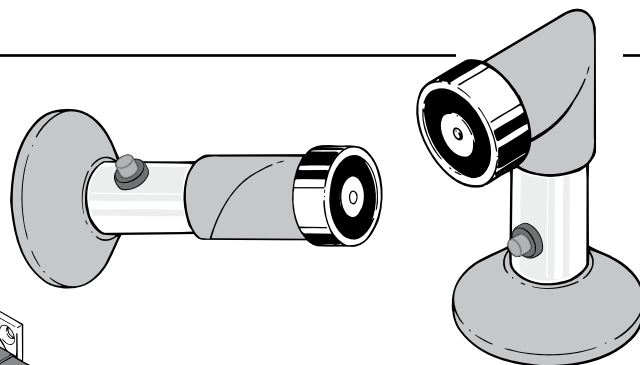
### Order Information

Zener barrier Z779	part no. 040589
CI-K casing for the Zener barrier	part no. 040585

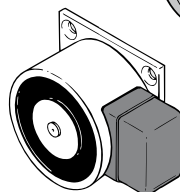


## Electromagnets - Summary

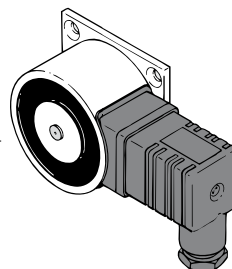
- Electromagnet with swivel head \_\_\_\_\_  
Page 07.031.00



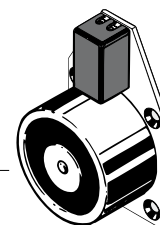
- Electromagnet with connection terminal \_\_\_\_\_  
Page 07.035.00



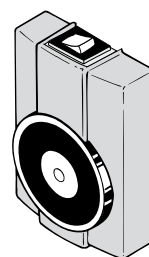
- Electromagnet with connection terminal, IP 65 \_\_\_\_\_  
Page 07.037.00



- Electromagnet with connection terminal on the mounting plate \_\_\_\_\_  
Page 07.038.00

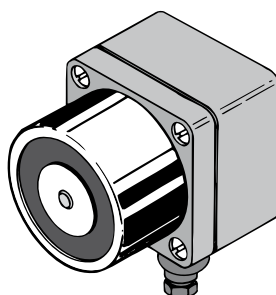


- Electromagnet with interrupter key \_\_\_\_\_  
plastic casing  
Page 07.039.00



- Ex-proof electromagnet for zones 2 and 22 \_\_\_\_\_  
with IP 65 protection  
Page 07.041.00

- Ex-proof electromagnets \_\_\_\_\_  
with IP 66 protection  
Page 07.043.00



- Electromagnet for flush mounting \_\_\_\_\_  
Page 07.047.00



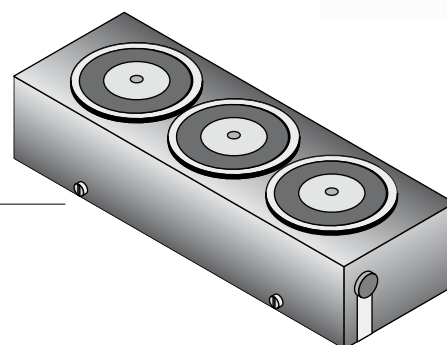
- Electromagnet for floor mounting \_\_\_\_\_  
Page 07.049.00



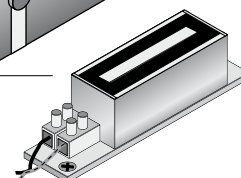
- Electromagnet with feed-back contact \_\_\_\_\_  
Page 07.051.00



- Three pole heavy duty magnet (4850 or 5100 N) \_\_\_\_\_  
Page 07.055.00  
(for further bar magnets see Access Control Systems)



- Bar magnet \_\_\_\_\_  
Page 07.057.00





## 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 consumption** 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.

## 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 EM GD 60 electromagnet has been **tested** according to EN 1155 and **among others** is included in the following **approvals**: Z-6.5-1903, Z-6.5-1707.



### Technical Data

Electromagnet	EM GD 60	EM GD 60 S
Voltage	24 VDC $\pm 10\%$	24 VDC $\pm 10\%$
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.

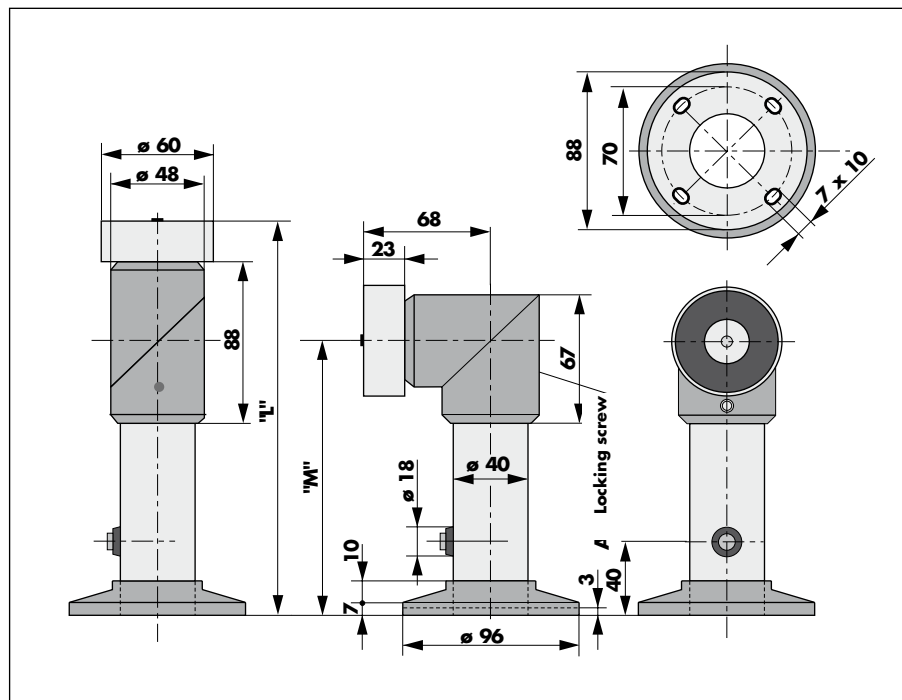
The connection wires are inserted through an opening in the mounting plate. After the magnet has been properly mounted and wired, both plastic covers are pushed from the side over the mounting plate and clipped into position.

### 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	Force	Length "L"	Height "M"	Part no.
GD 60 S 175	700 N	175 mm	107 mm	040111
GD 60 S 175 oT (ohne Taster = without interruptor key)	700N	175 mm	107 mm	040264
GD 60 S 175 S	1000 N	175 mm	107 mm	040164
GD 60 S 325	700 N	325 mm	257 mm	040112
GD 60 S 475	700N	475 mm	407 mm	040113



### 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.

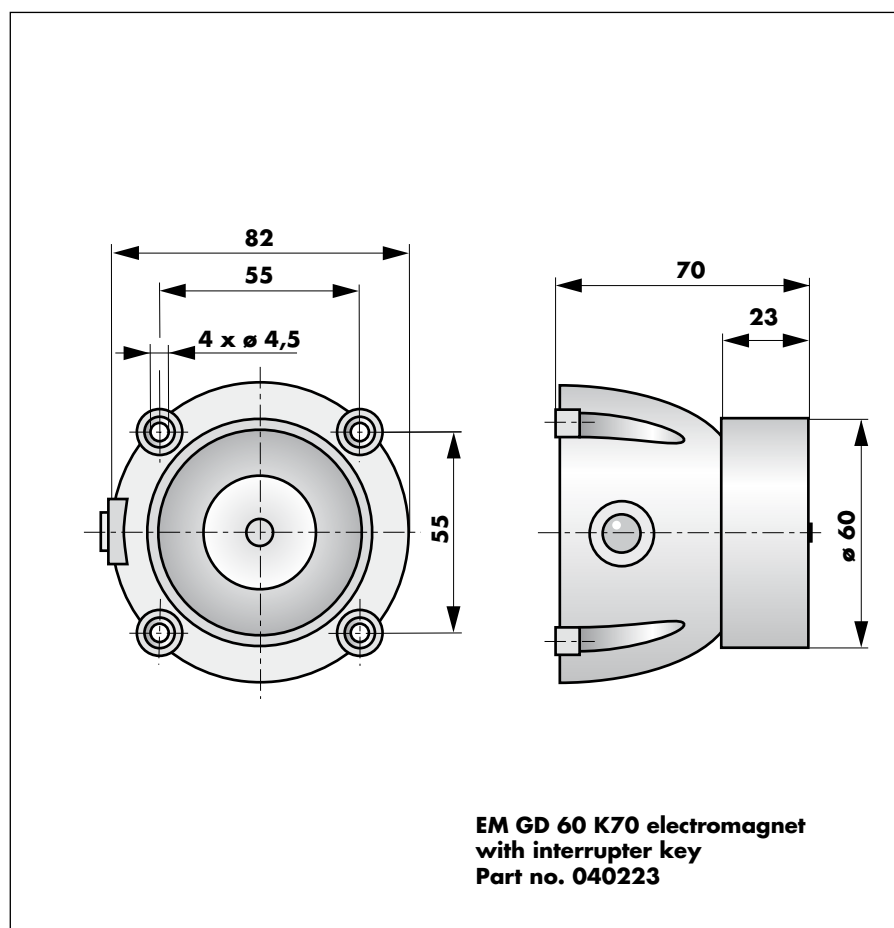
Fix the magnet to the wall and the anchor plate to the door. A selection of counter plates can be found later in this section.

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



### 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

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**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.

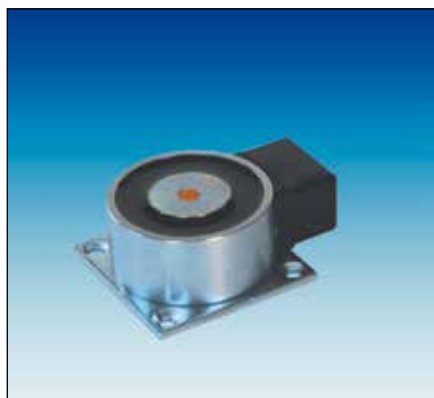
The electromagnets with connection terminal types EM GD 50 und 60 R 26 I can be connected to both 24 VDC and 24 VAC.

Most of the electromagnets of the R, RI and F series are **tested** according to EN 1155 and **among others** are included in the following **approvals**: Z-6.5-1903, Z-6.5-1707.



### Technical Data

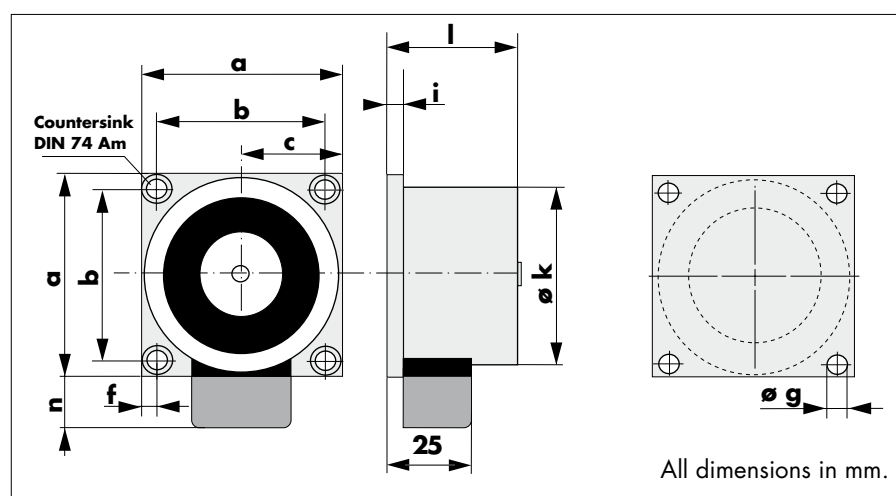
Voltage, standard configuration	24 VDC $\pm$ 10 %
Voltages, special configurations	24 VAC $\pm$ 10 % , 230 VAC, 230 VDC
Power consumption	67 mA to 142 mA
Duty cycle	100 %
Operating temperature	-20 °C to +60 °C
Holding force	300 N to 2000 N
Remanence	0 N
Surface magnet, mounting plate	zinc-plated



## Electromagnets with Connection Terminal Model R

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

## Dimensions



Type	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
<b>GD 50 R 26</b>	24 VDC ±10%	67 mA (= 1.6 W)	600 N
<b>GD 60 R 26</b>	24 VDC ±10%	67 mA (= 1.6 W)	700 N
<b>GD 60 R 26 S</b>	24 VDC ±10%	79 mA (= 1.9 W)	1000 N
<b>GD 70 R 39</b>	24 VDC ±10%	71 mA (= 1.7 W)	1450 N
<b>GD 70 R 39 S</b>	24 VDC ±10%	142 mA (= 3.4 W)	1700 N
<b>GD 70 R 39 R</b>	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

\* not tested according to EN 1155



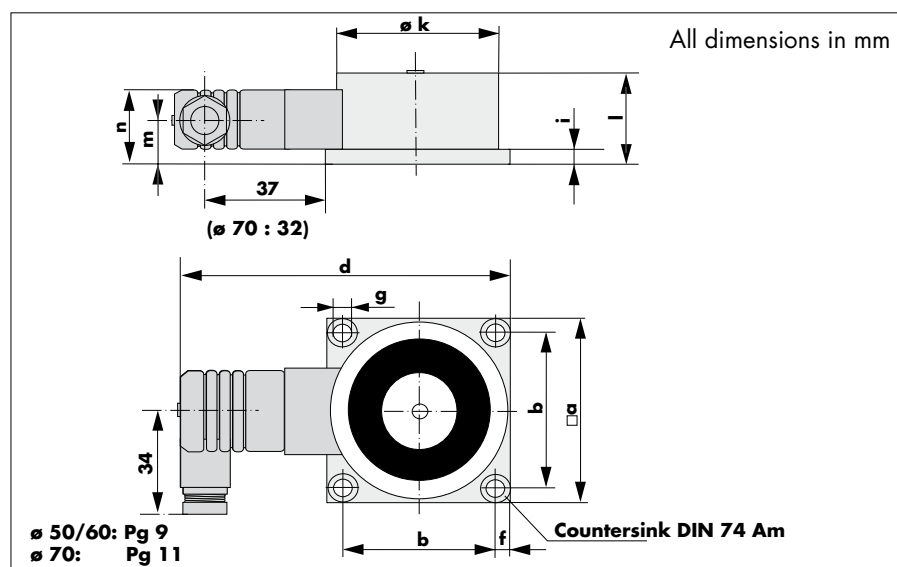
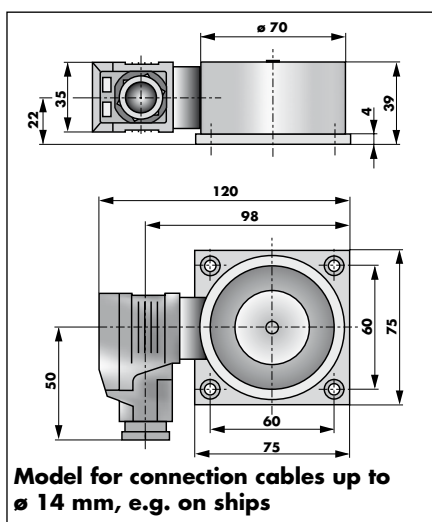


### Electromagnets with Connection Terminal Model RI with Connection Terminal IP 65

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 (**grey, contains silikon!**).

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

### Dimensions



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

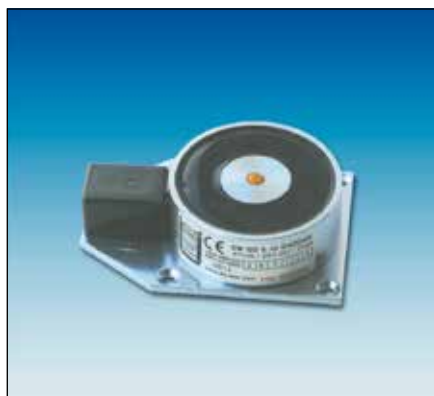
### Technical Data

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 <b>UV</b>	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

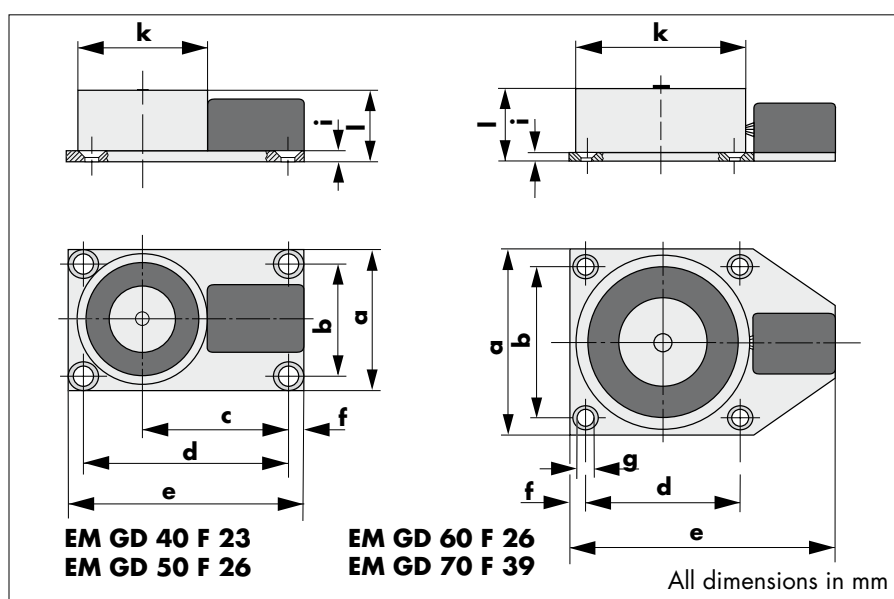
\* not tested according to EN 1155



## 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.

## Dimensions



Type	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

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

\* not tested according to EN 1155

## 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 completely be 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.

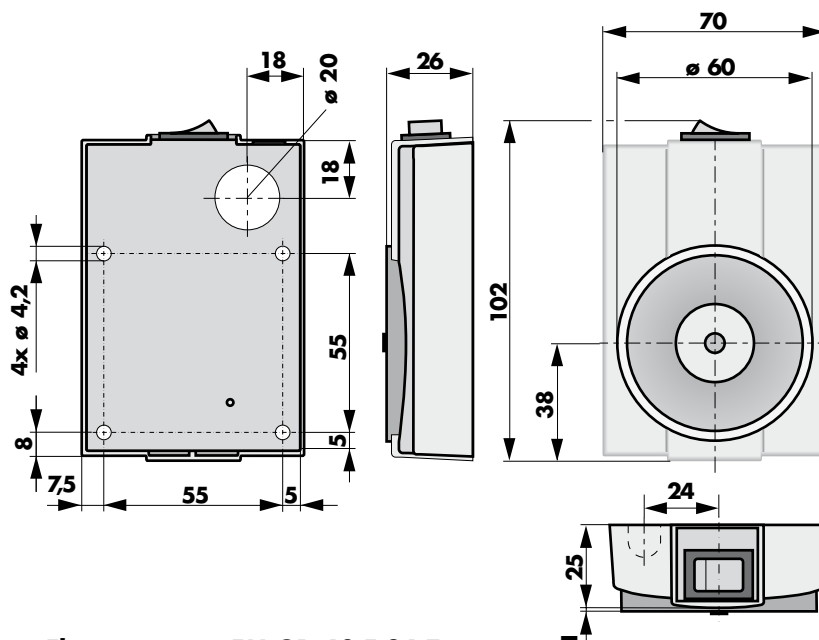
The electromagnets have been **tested** according to EN 1155 and **among others** are included in the following **approvals**: Z-6.5-1903, Z-6.5-1707.



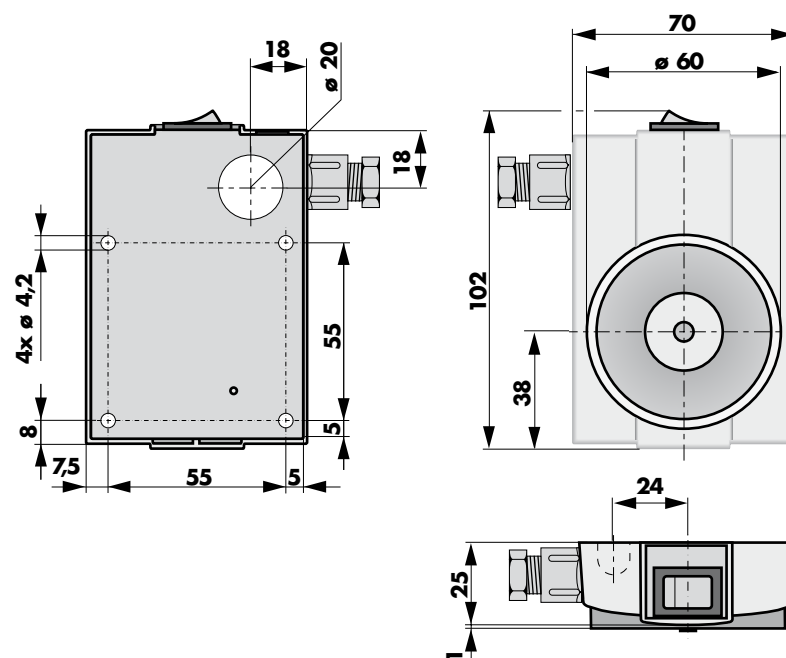
### Technical Data

Voltage	24 VDC $\pm 10\%$
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

### for the Exclusive Use in Hazardous Zones 2 and 22

Hazardous areas are divided into different zones. As zones 2 (gas) or 22 (dust) are defined areas where during normal operation no dangerously hazardous atmosphere occurs or when only during a short period. The demands on devices used in these zones are minor to those applying to the ex-proof Dictator electromagnets, series EM GD Ex m.

Therefore, Dictator provides for the use in hazardous areas of the zones 2 and 22 an **economic** alternative, the EM GD 70 R39I Ex2 ex-proof magnet.

The following three features distinguish it from the normal EM GD 70 R39I:



- connecting terminal for the prescribed equipotential bonding,
- larger base plate,
- special label for hazardous areas.

By default the EM GD 70 R39I Ex2 is equipped with diodes to suppress the induced current on opening (spark extinction diodes) and polarity protection.

The electromagnets have been tested according to EN 1155 and are among others included in the following approvals: Z-6.5-1903, Z-6.5-1707.



### Technical Data

Electromagnet	EM GD 70 R39I Ex2
Voltage	24 VDC $\pm 15\%$
Power consumption ( $\pm 15\%$ )	71 mA (1.7 W)
Force / Remanence	1450 N / 0 N
Ignition protection type	 II 3G Ex nC IIC T6 Gc X
	 II 3D Ex nC IIIC T85°C Dc X
Protection / Duty cycle	IP 65 / 100 %
Operating temperature	-20 to +60 °C
Connection	connector box GDML 2011 GE 1 G, PG 11
Finish	magnet and base plate zinc-plated



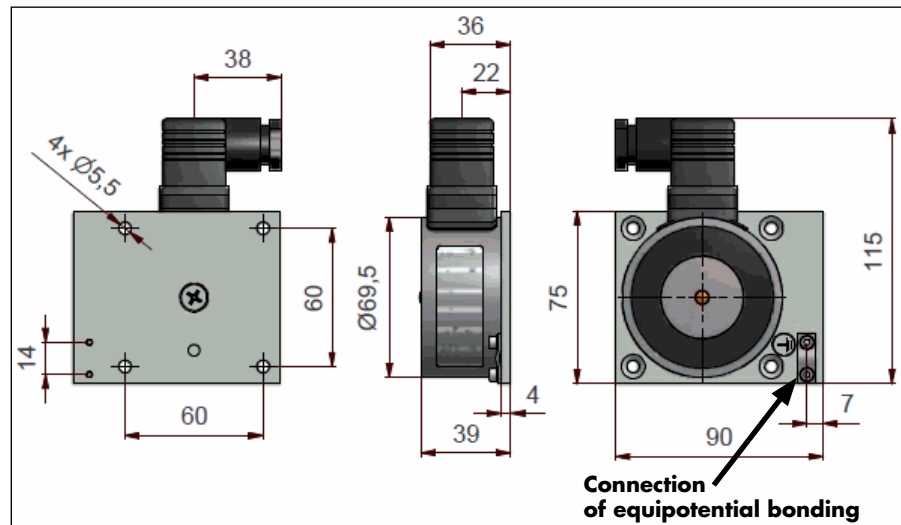
## Dimensions, Application, Accessories

The EM GD 70 R39 I Ex2 electromagnet may exclusively be used in hazardous areas of the zones 2 and 22.

More conditions for the use in the zones 2 and 22:

- The magnet must be protected against mechanical impact.
- A protective earth connection is mandatory.
- A fuse has to be connected upstream to the magnet.
- All regulations for hazardous areas have to be observed.

## Dimensions

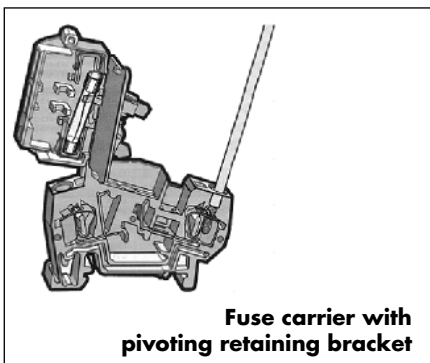


## Electrical Connection

### Connection polarity on the plug:

Screw terminal 1 (+)  
Screw terminal 2 (-)

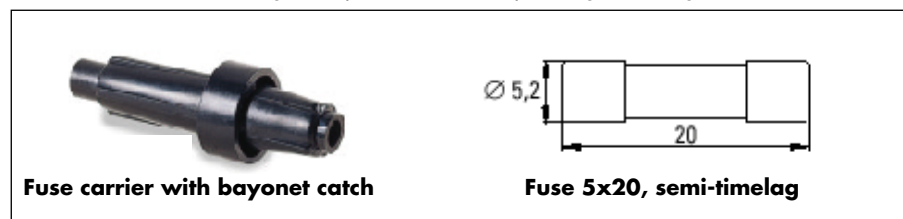
## Fuse, Fuse Carrier



To protect the magnet from a possible short circuit, a fuse T 200 mA with a minimum breaking capacity of 1500 A has to be connected upstream to the magnet.

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

- Fuse carrier for soldering directly into the feeding line, with bayonet catch  
Dimensions of the fuse carrier: L = 43.2 mm,  $\varnothing$  = 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



## Order Information

EM GD 70 R39 I Ex2 electromagnet (zones 2 and 22), 1450 N	part no. 040190
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

## 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, 21 and 22 (according to the standard VDE 0165), with the exception of underground pits.

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

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

DICTATOR explosion-proof electromagnets have been tested according to **EN 1155** and also the directive **2014/34/EU (ATEX)**.

They are registered under the **type-examination certificate** IBEU14ATEX1211X/PTB 03 ATEX 2174X and the confirmation of the conformity to building class PTB 03 ATEX N060-5 at the PTB Institute, Braunschweig/Germany.

**Among others** they are included in the following **approvals**: Z-6.5-1903, Z-6.5-1707.



### Technical Data

Electromagnet	EM GD 50 Ex .. m	EM GD 70 Ex .. m
Voltage $\pm 15\%$	24 VDC	24 VDC
Max. permitted ripple	20 %	20 %
Power consumption ( $\pm 15\%$ )	67 mA (1.6 W)	70 mA (1.7 W)
Force / Remanence	600 N / 0 N	1450 N / 0 N
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 varnished grey	
Ex-protection cable design	Ex II 2G Ex mb IIC T6 Gb / Ex II 2D Ex mb IIIC T85°C Db	
Ex-protection terminal box	Ex II 2G Ex mb e IIC T6 Gb / Ex II 2D Ex mb e IIIC T85°C Db	





## 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 or the length indicated with the part number. Other lengths 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

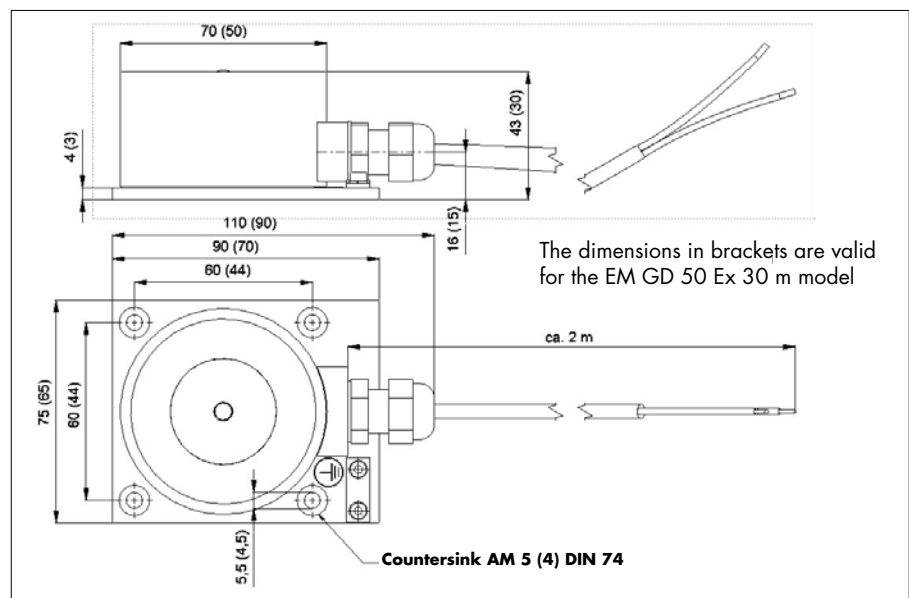
The DICTATOR explosion-proof magnet is fixed to the wall behind the door that needs to be kept open. The connection cable must be securely embedded and sufficiently protected from mechanical damage (e.g. by using a cable channel).

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 07.017.00). However each magnet must be protected by a fuse (G 200 mA type semi-timelag) of max.  $3 \times I_b$  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 mm<sup>2</sup> 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

EM GD 50 Ex 30 m	cable 2 m (standard)*	part no. 040154
EM GD 70 Ex 43 m	cable 2 m (standard)*	part no. 040156

\* Length of cable: standard 2 m, optionally 5, 10 or 15 m

The length of the cable is added to the part number:

e.g. EM GD 50 EX 30 m with a 5 m long connection cable: 040154-5



### 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<sup>2</sup>. The EM GD...Ex...em electromagnet has "Encapsulation (m)" protection and the terminal box has "Increased safety (e)" protection.

### Installation

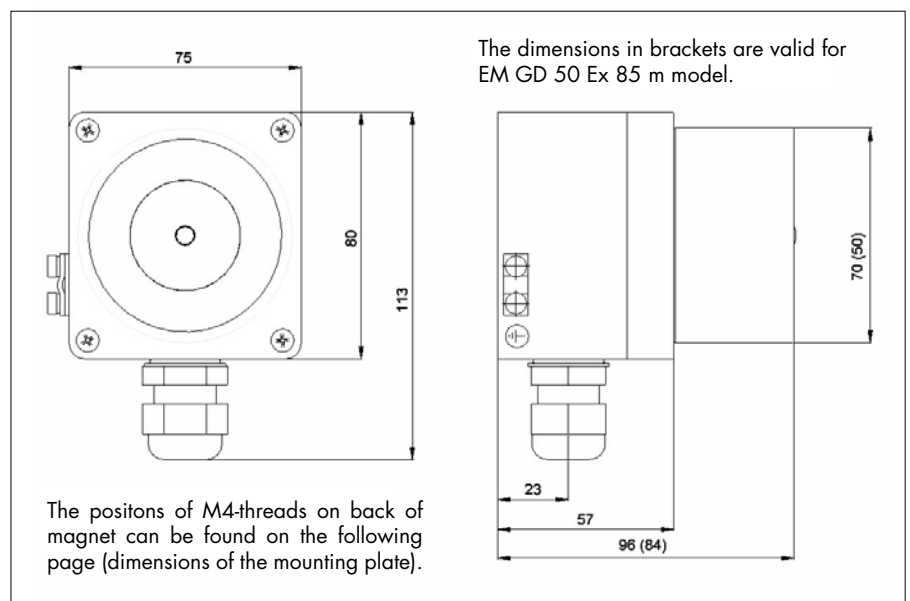
The DICTATOR explosion-proof magnet with terminal box is fixed to the wall behind the door that needs to be kept open. For a secure installation we recommend our mounting plate, part no. 205252 (see following page), to which the magnet is screwed with 2 M4 screws.

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 07.017.00). However each magnet must be protected by a fuse (G 200 mA type semi-timelag) of max.  $3 \times I_B$  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 equi-potential bonding conductor of a minimum cross section of 4 mm<sup>2</sup> 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

EM GD 50 Ex 85 m electromagnet	part no. 040157
EM GD 70 Ex 99 m electromagnet	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.

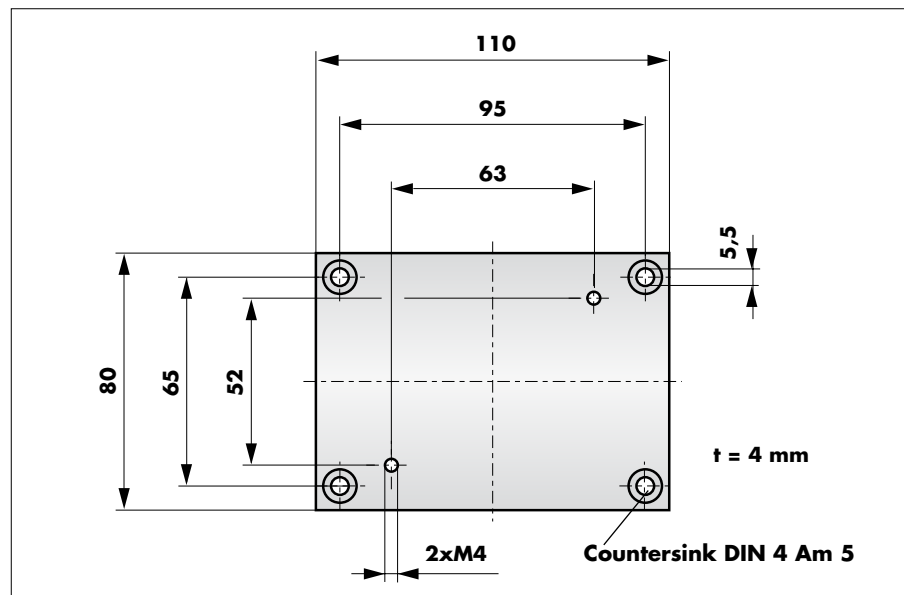
The magnet is screwed to the mounting plate and fixed to the wall with 4 screws.

Each magnet must be protected by a fuse of max.  $3 \times I_B$  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.

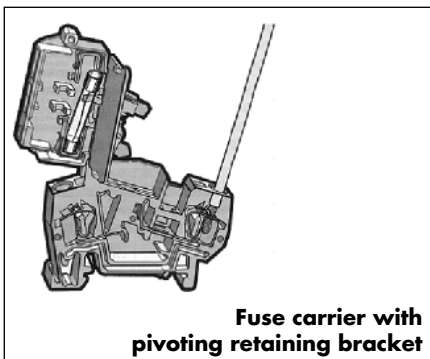
### Mounting Plate

The DICTATOR mounting plate is screwed to the wall behind the door that has to be kept open by the magnet with 4  $\varnothing 5$  flat head screws. The magnet is then fixed to the mounting plate with two M4-screws.

### Dimensions



### Fuse, Fuse Carrier



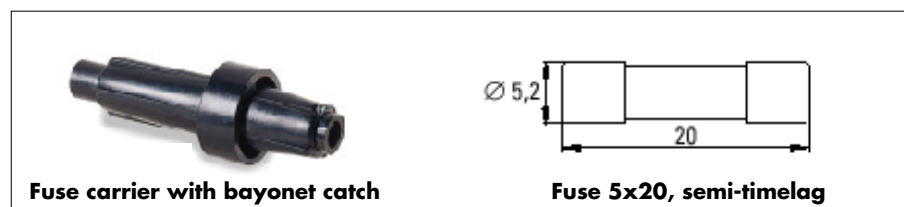
The fuse is placed with the fuse carrier directly into the feeding line to the ex-proof magnet. There are available two different types of fuse carriers.

- Fuse carrier for soldering directly into the feeding line, with bayonet catch

Dimensions of the fuse carrier:  $L = 43.2 \text{ mm}$ ,  $\varnothing = 14.2 \text{ mm}$

Suitable for cables with a cross section up to max.  $4 \text{ mm}^2$

- Fuse carrier for mounting on top hat rails, with pivoting retaining bracket



### 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

## 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 standard and is included **among others** in the following **approvals**: Z-6.5-1903, Z-6.5-1707.



### Technical Data

Voltage	24 VDC $\pm$ 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 then 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.

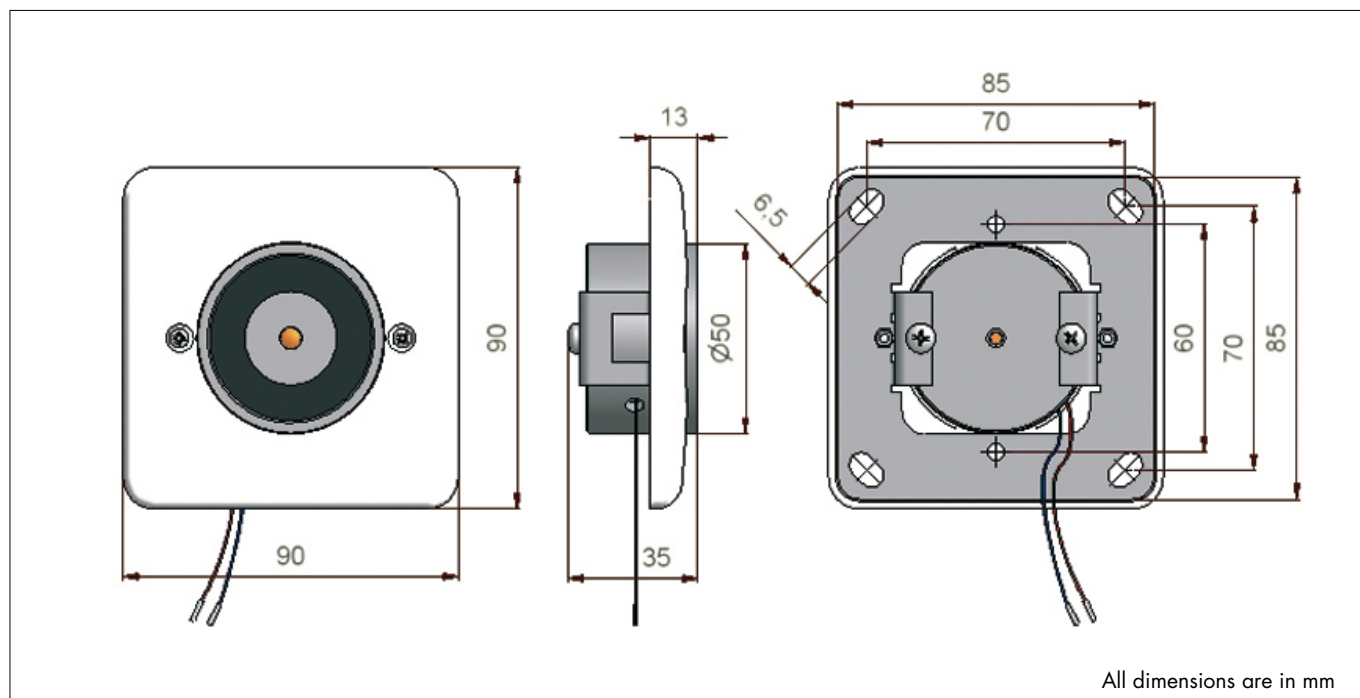
**Please note:** It must be possible to release a fire protection door held open by an electromagnet with a hand switch which is not hidden by the open door. (DICTATOR hand switch part no. 040005, see diagram on left).



## 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



## Order Information

EM GD 50 U 35 electromagnet

force 600 N

part no. 041011

## 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** according to the EN 1155 and is included **among others** in the following **approvals**: Z-6.5-1903, Z-6.5-1707.



### 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.

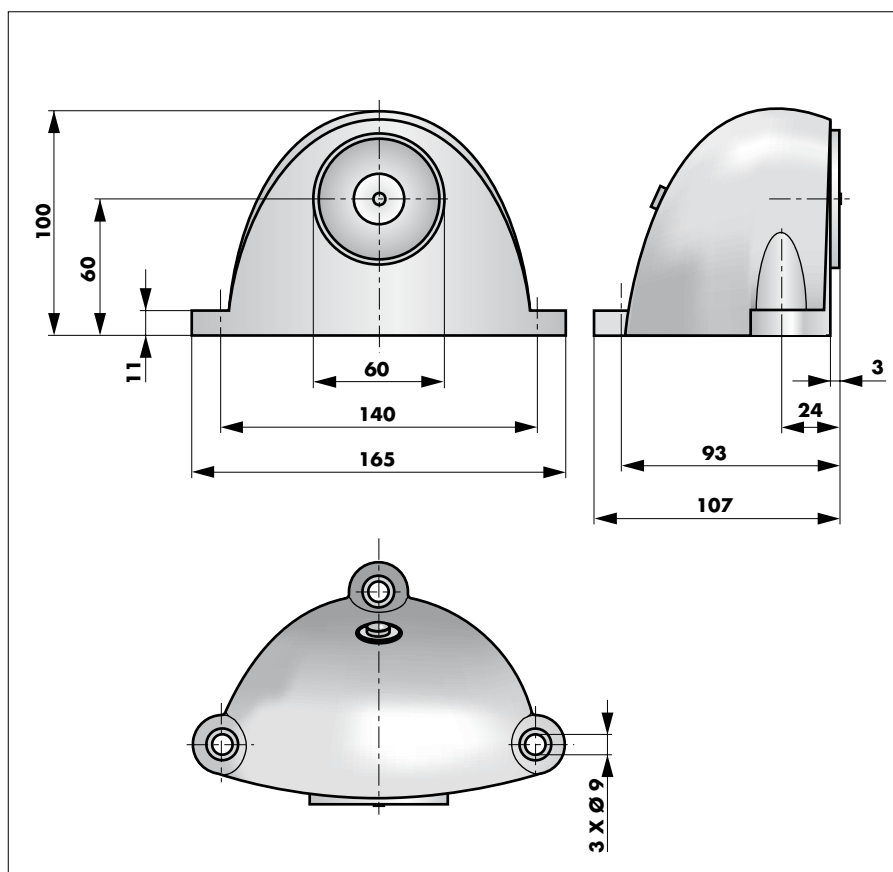
A counter plate needs to be fixed to the door as a counterpart to the magnet (use one of the series AP GD 60...). The diameter of the counterplate must match the diameter of the electromagnet. A selection of counter plates can be found later in this section.

### 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 Feedback Contact (Models ST/RM)

DICTATOR electromagnets with feedback 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 feedback 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.

The electromagnets with feedback contact have been **tested** according to EN 1155 and are included **among others** in the following **approvals**: Z-6.5-1903, Z-6.5-1707.



### Technical Data

EM GD Electromagnet	Model RM	Model ST
Voltage	24 VDC $\pm 15\%$	
Power consumption $\pm 10\%$	see information on the following pages	
Force	600 N - 1450 N	
Duty cycle / Remanence	100 % / ON	
Operating temperature	$-20\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$	
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	



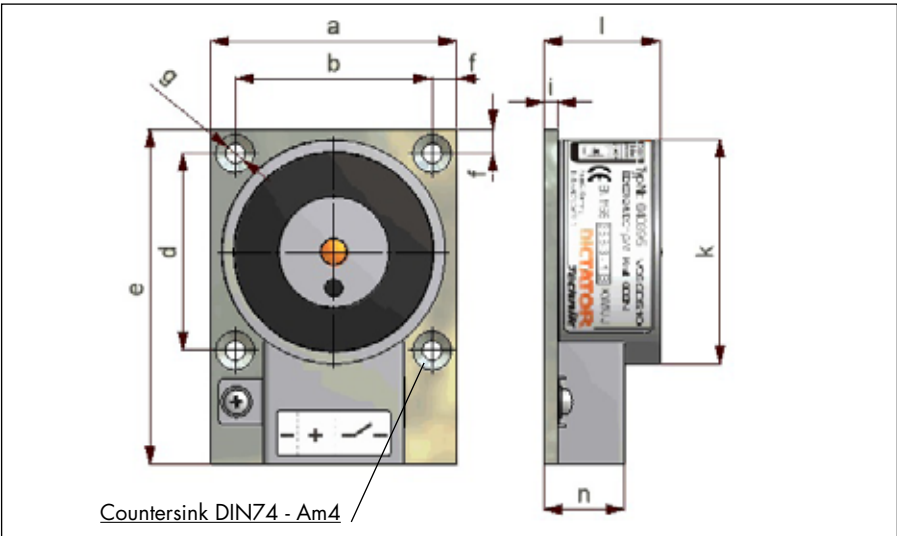
Electromagnet with Feedback Contact

Model RM

The RM electromagnets are equipped with a connection terminal on the base plate for the 24 VDC power supply and the feedback 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

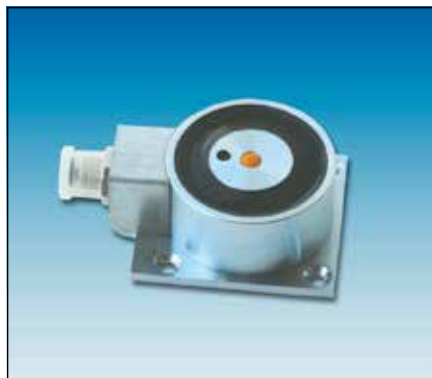
All dimensions in mm

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



### Electromagnet with Feedback Contact

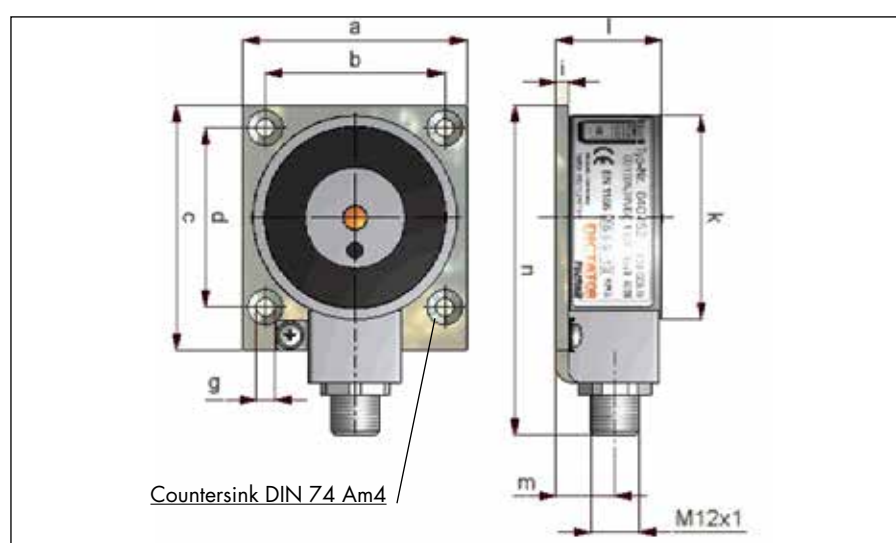
#### Model ST

The ST model electromagnets with feedback 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	4	Ø 70	39	19.5	102

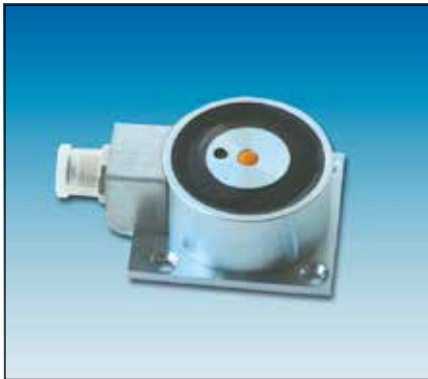
All dimensions in mm

### 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 Feedback 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.

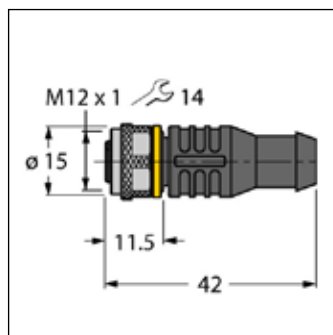
**Please note:** It must be possible to release a fire protection door held open by an electromagnet with a hand switch which is not hidden by the open door. (DICTATOR hand switch part no. 040005).

## 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.

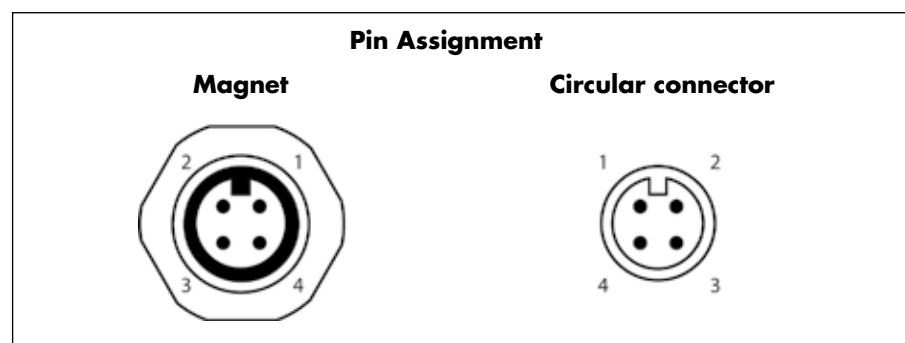
## Circular Connector M12x1



### 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



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 (4850 N or 5100 N)

The DICTATOR EM FH 266.5x82x55 three pole heavy duty magnet is designed for applications where very high holding forces are necessary (e.g. large doors, conveying systems etc.).

It consists of three single EMGD 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 can also be provided with a feedback contact (RM model). The feedback functions by measuring the changing of the magnet field when the counter plate lies against the magnet or not.

Both types have differing holding forces (see table).

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

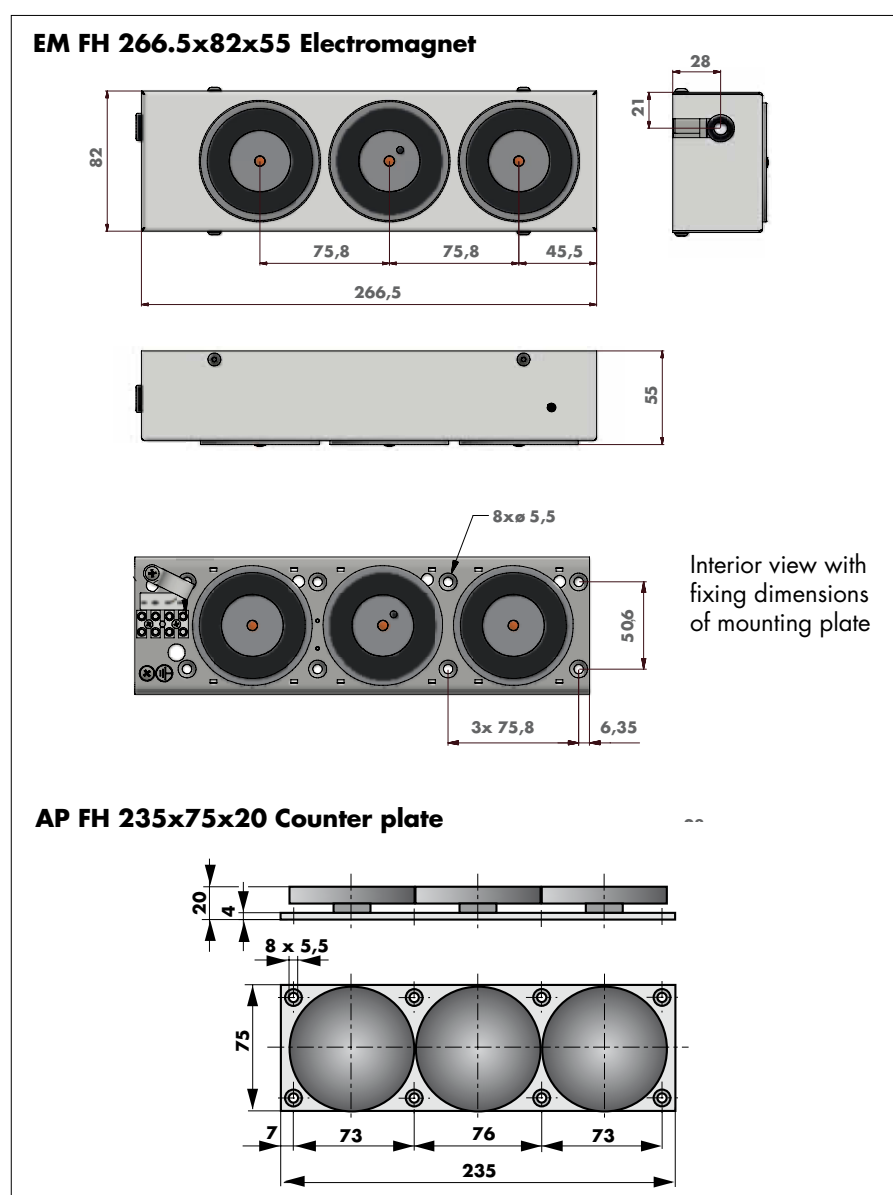
Electromagnet EM	FH 266.5x82x55	FH 266.5x82x55 RM
Voltage	24 VDC $\pm$ 10 %	
Power consumption	438 mA (10.3 W)	355 mA (8.5 W)
Force	5100 N	4850 N
Duty cycle / Remanence	100 % / 0 N	
Operating temperature	-20 °C to +40 °C	
Finish	magnet zinc-plated, casing white powder coated	
IP rating	IP 20	
Feedback contact	no	yes

## Installation

When using the three pole heavy duty magnet 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 indicated force and have a feedback 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. The connection cable is introduced via a rubber funnel in the side of the casing. Screw the casing back on the base plate after mounting and wiring.

## Dimensions



## Order Information

EM FH 266.5x82x55 electromagnet	force 5100 N	part no. 040270
EM FH 266.5x82x55 RM electromagnet	force 4850 N	part no. 040271RM
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 $\pm 10\%$
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)

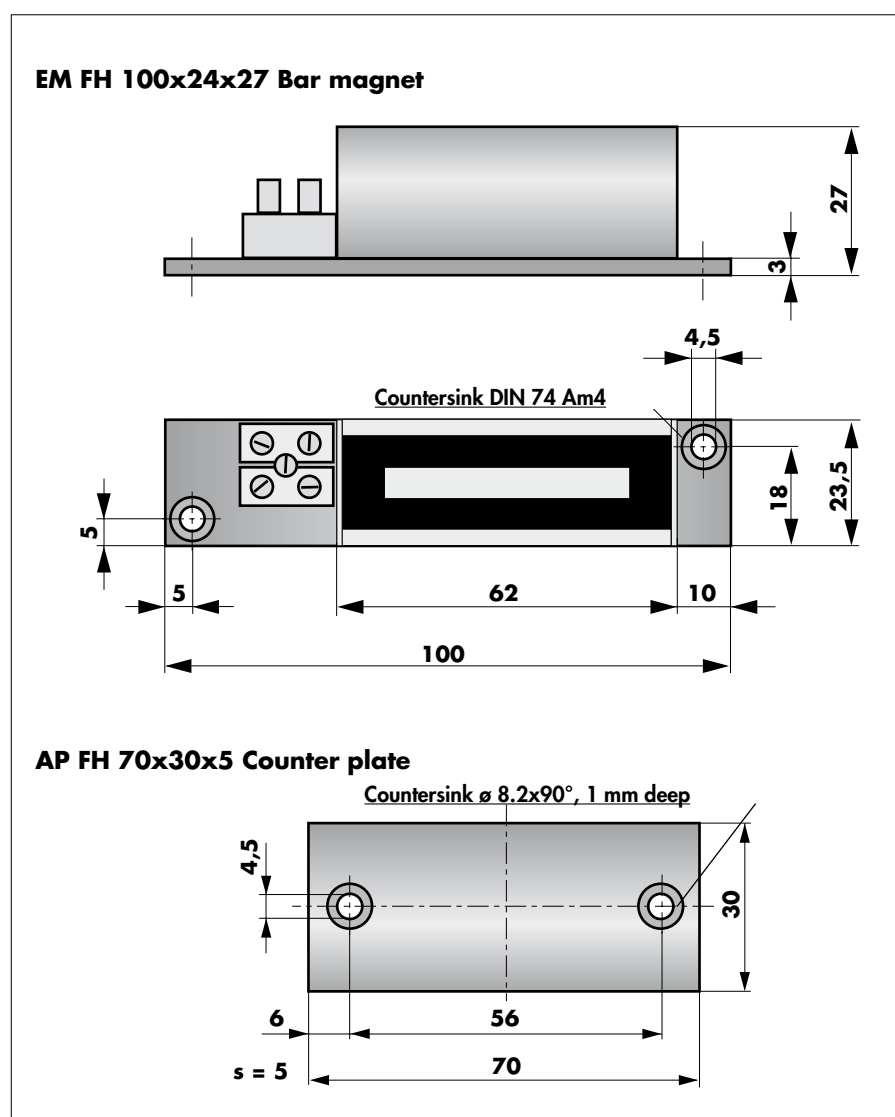


## Installation

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



## Order Information

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



## Flexible Counter Plate

### With Elastic Joint (Model G)

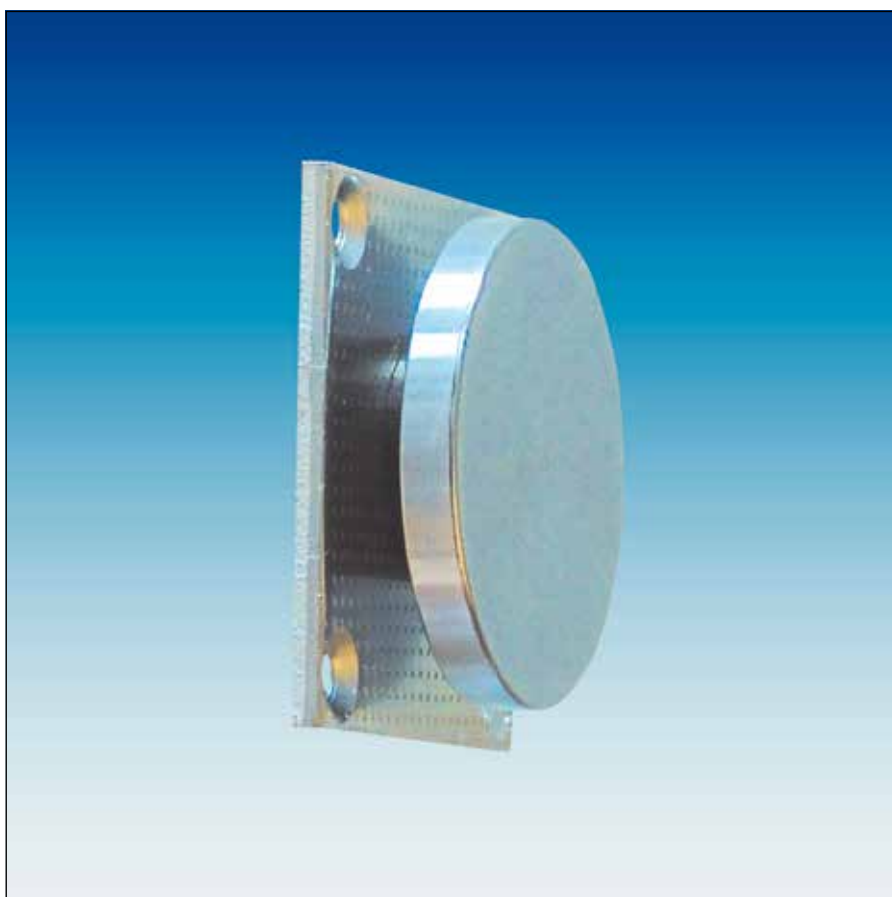
DICTATOR counter plates provide the safe and reliable connection between door and electromagnet.

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

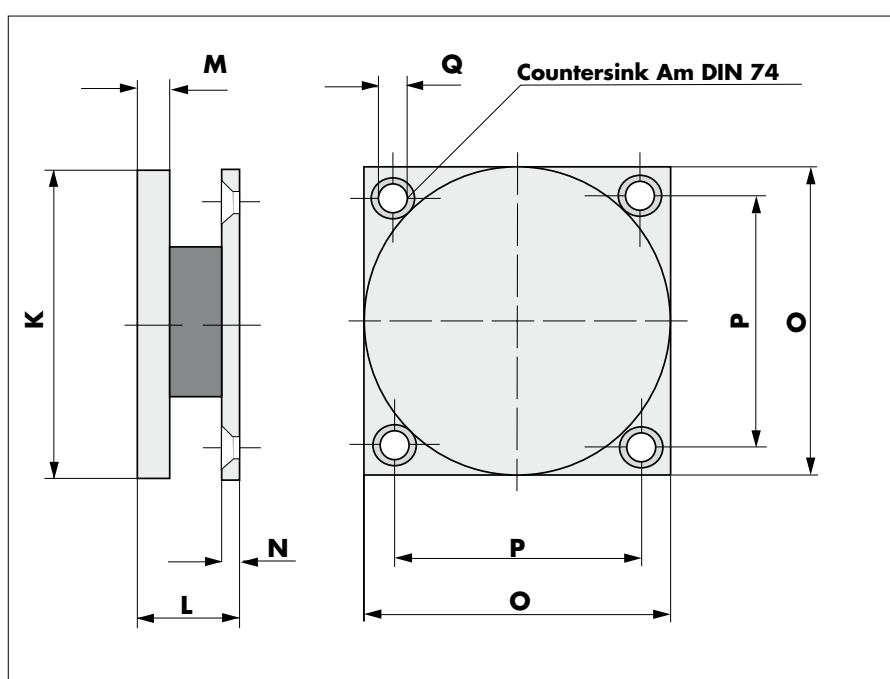
## Installation

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.

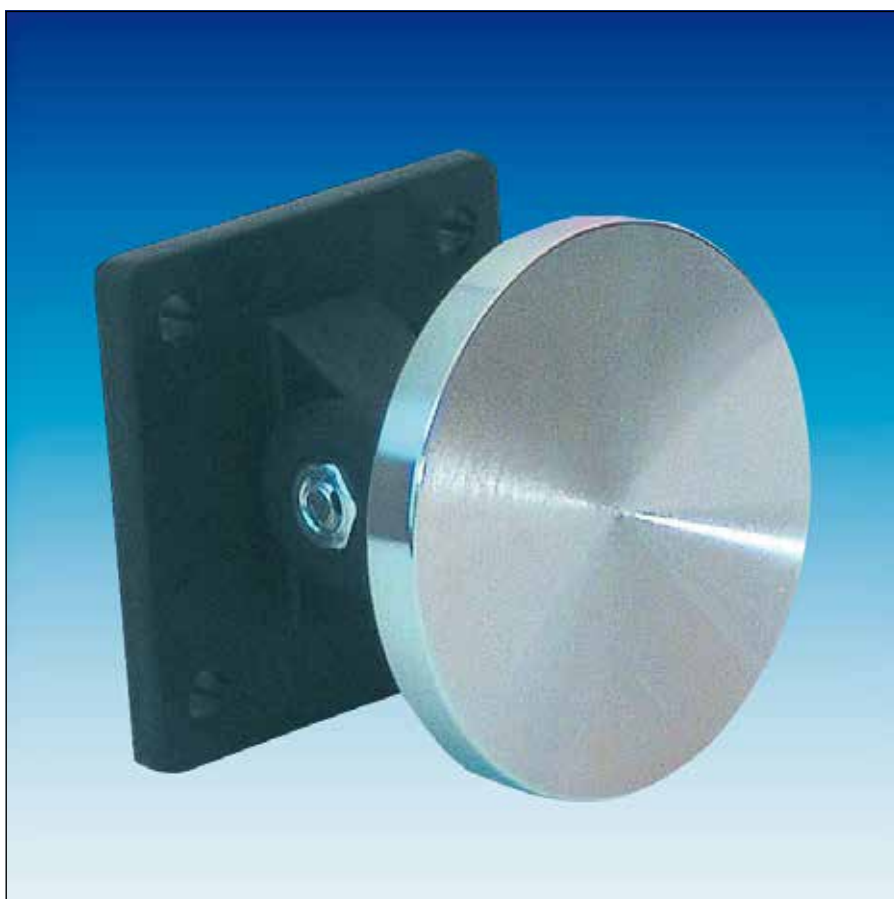
## Counter Plate With Angular Joint

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

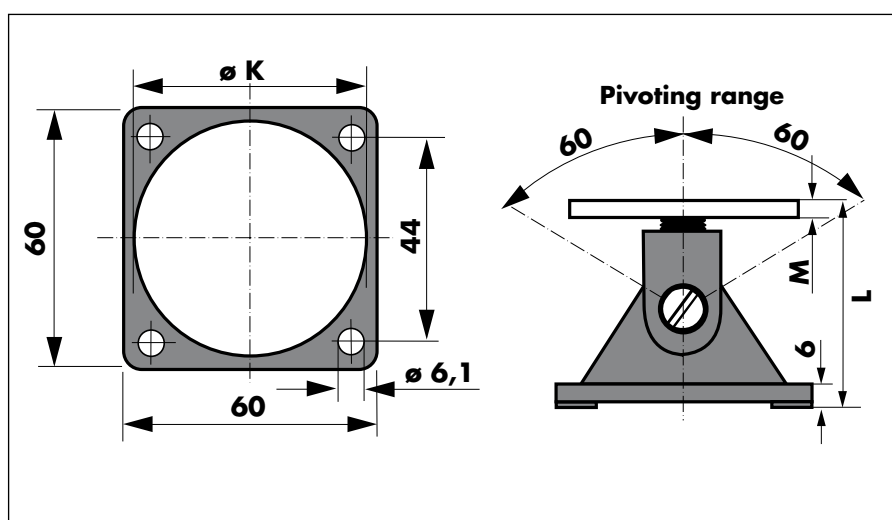
## Installation

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.

## 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, **modern** design and **economic** production.

The casing is made of **fiberglass 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 reinforced
Colour of the casing	anthracite
Armature plate	zinc-plated steel
Damping force	100 N on a stroke of 20 mm

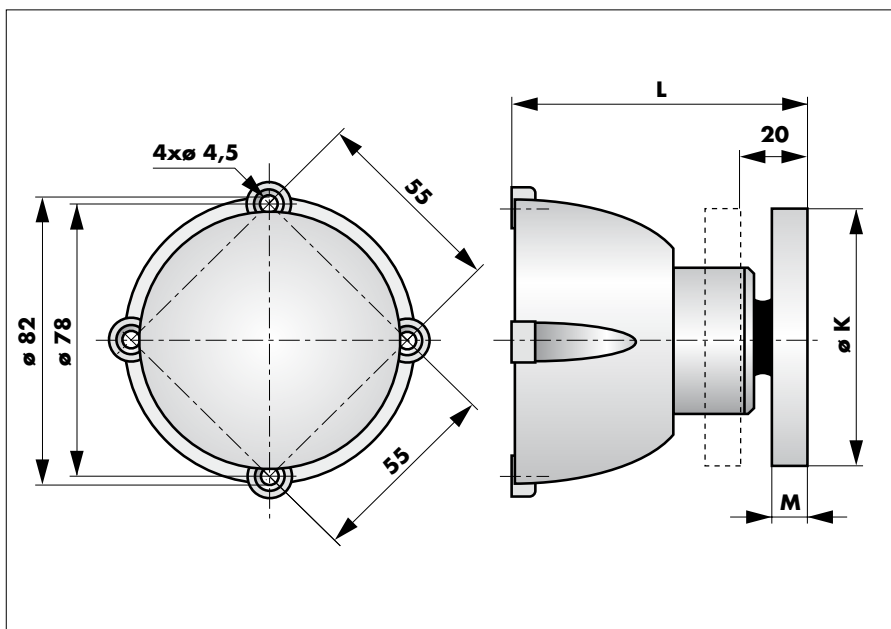
## Installation

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 mounting 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 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

## Brackets for Electromagnets For Easier Mounting

DICTATOR offers a distance bracket for the wall or floor and a telescopic bracket for fixing electromagnets. In certain situations they make mounting electromagnets much easier and faster.

The two different types characterize as follows:

- **Distance bracket for floor and wall mounting.** The **head** can be **swiveled** up to **180°** and thus can adapt to the most different hitting angles of the door. The **height** of the **console** can be adjusted up to 70 mm. The base plate of the magnet is screwed to the bracket (4 Allen head screws are included in the delivery). When choosing the appropriate console for the base plate of the electromagnet you have to consider the distance between the borings and their diameter.
- **Telescopic bracket**  
The telescopic bracket allows to easily adapt the mounting position of the magnet on site. It offers a very large adjusting range and is extremely robust. That predestines it especially for heavy duty applications (e.g. in schools).

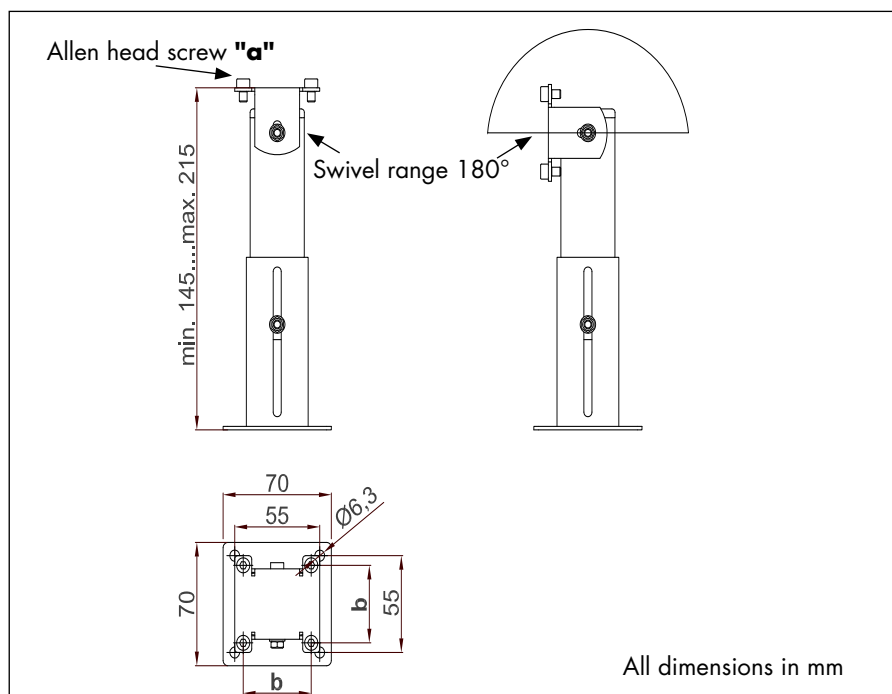


### Technical Data

	Floor/wall distance bracket	Telescopic bracket
Adjusting range	head can be swiveled up to 180°	inclination of arm 90 - 136°
Adjustability of height	145 - 215 mm	388 - 520 mm
Hole pattern designed for	EM GD 50 and 60	EM GD 50, 60 and 70
Material/Finishing	sheet steel, powder-coated in white (RAL 9010)	

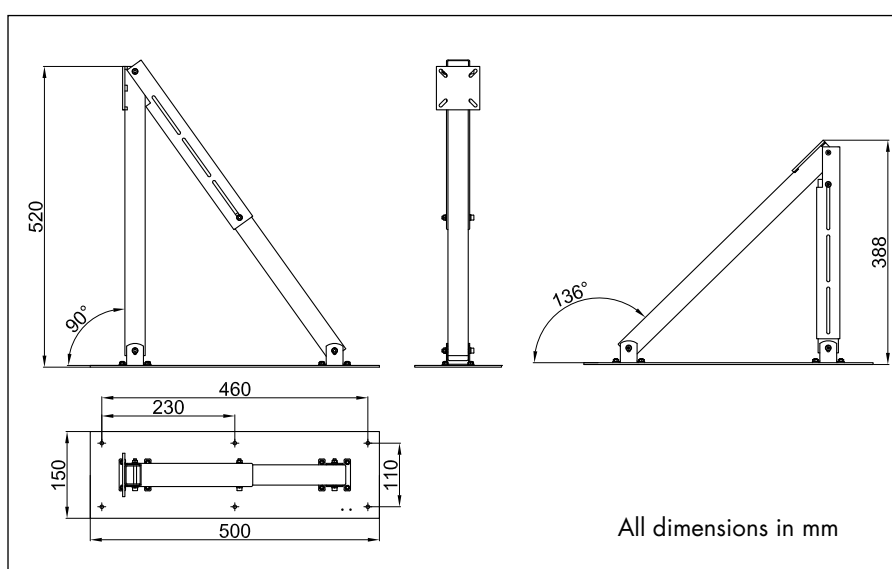
## Dimensions and Part Numbers

### Dimensions Distance Bracket



Bracket	a Dimension	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

### Dimensions Telescopic Bracket



### 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
Telescopic bracket white, oblong fixing holes	part no. 040147



## 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.

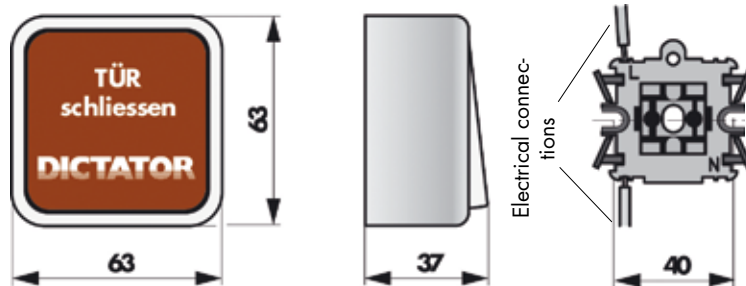
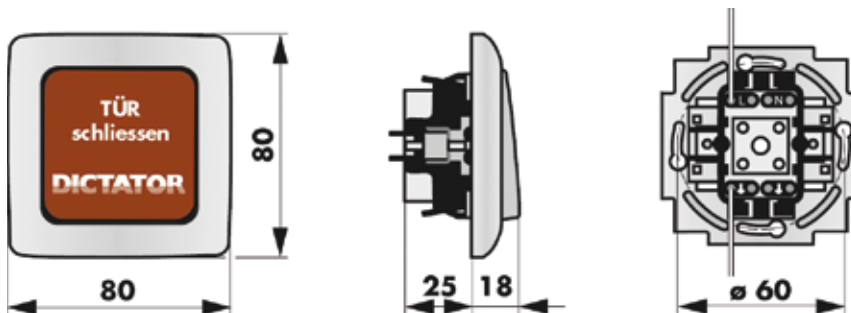
In hold-open systems with DICTATOR RM 3000+ smoke or WM 3000+ heat detectors and DICTATOR electromagnets, connect the hand switch to the first smoke or heat detector.

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**

All dimensions in mm

## HLS Thermal 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 **Hot-Locking-Safe** thermal bolting offers protection for life and material in a simple and unobtrusive way. The temperature bolt 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 thermal 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.

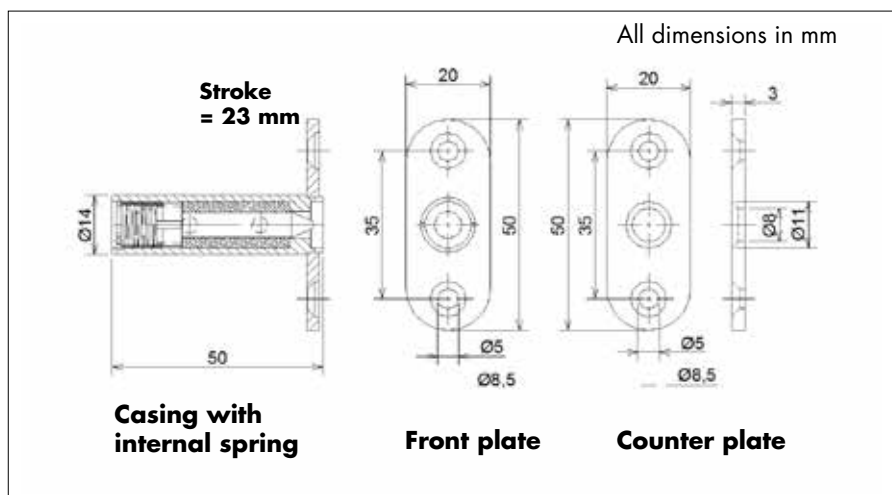
**IMPORTANT:** The HLS thermal bolting may only be installed in accordance with the respective door producer.



### 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

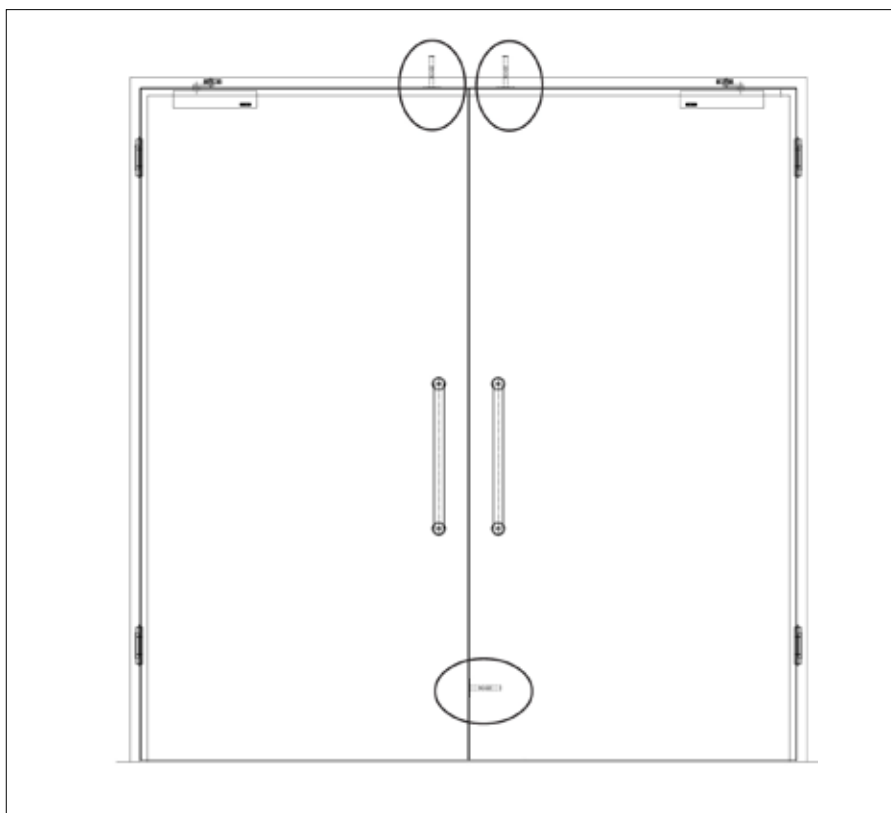
## Dimensions TV2003-50



## Installation Example

Usually the HLS thermal 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 manufacturer.

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



## Order Information

HLS thermal bolting TV2003-50, Hotmelt, 23 mm stroke part no. 710715

## 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:

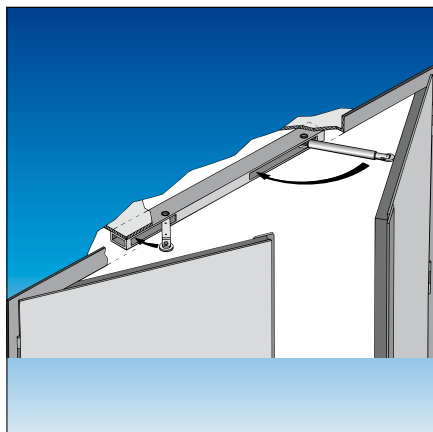
- **SR 90 door sequence selector** with usual lever arm and support brackets as an economic model.
- **SR 2000 door sequence selector** with or without electromagnetic locking of the lever arms. The SR 2000 is designed especially for two-leaved hinged fire doors meeting high aesthetic requirements. The SR 2000 can be mounted unobtrusively below the door frame behind both door leaves. Model SR 2000 E is provided with an electromagnet keeping both arms of the selector folded in, unless one of the connected smoke detectors switches to alarm and cuts the power supply to the magnet.

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 locking of the integrated arms
Material	zinc-plated steel



## 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.

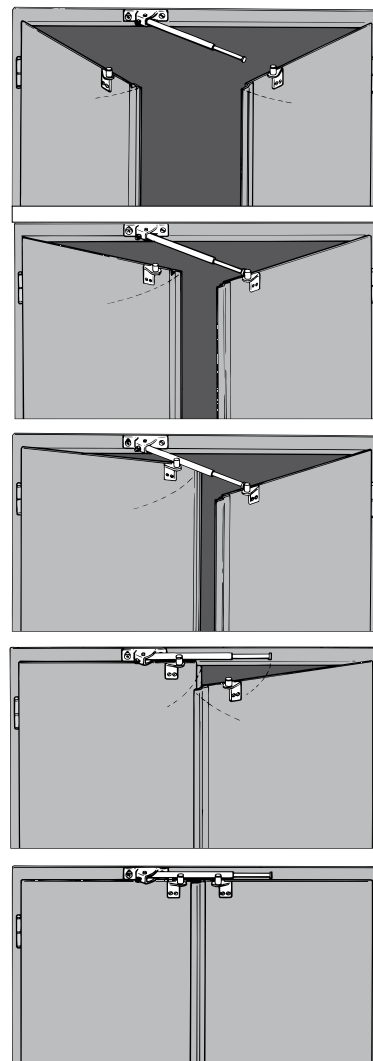
The door sequence selector controls the correct closing sequence of both door leaves:

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.



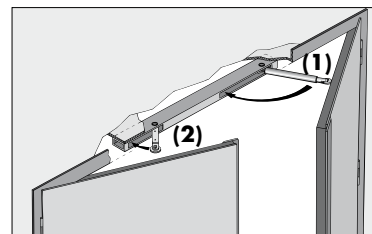
## Operation SR 2000

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.



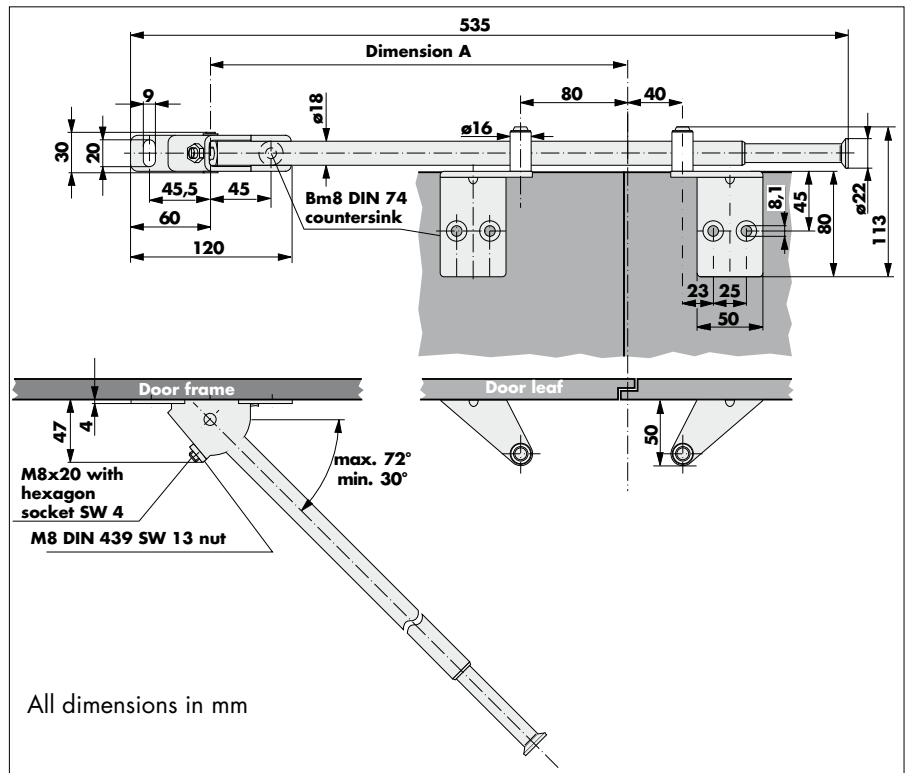


## Door Sequence Selector SR 90 Dimensions, Technical Data

The SR 90 door sequence selector has a telescopic arm which automatically sets itself in an upright position when both door leaves are opened. As counter piece a support bracket has to be mounted on both door leaves.

Detailed information on mounting is given in the mounting instructions. There is also explained how to determine the dimension A shown in the dimensioned drawing.

## Dimensions SR 90



## Technical Data

Weight of door leaf	max. 160 kg per door leaf
Width of door leaf	up to 1.60 m per door leaf
Space required above the door	min. 30 mm
Setting up angle	30° to 70°

## Components Included

- 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

## Order Information

SR 90 door sequence selector, zinc-plated, with accessories    part no. 500420P



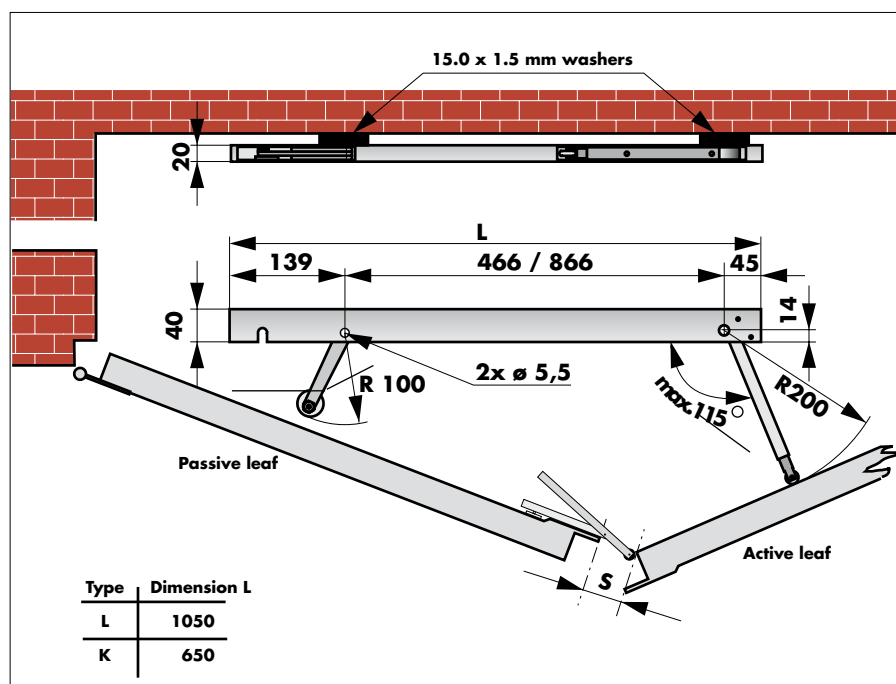


## Door Sequence Selector SR 2000

### Dimensions, Technical Data

The SR 2000 door sequence selector (see the illustration on the left) doesn't need any separate support brackets. In particular the model with integrated electromagnet fits absolutely unobtrusively in the appearance of the door.

### Dimensions SR 2000



### Supervision of Rotation Angle

If the SR 2000 E door sequence selector with electromagnet is used together with a door closer or a door operator which has an integrated hold-open, these devices have to include a so-called supervision of the rotation angle. This makes sure the power supply of the electromagnet is switched off as soon as the active leaf is closed manually. Then the telescopic arm is activated and can support the active leaf.

### Technical Data

Weight of door leaf	max. 160 kg per door leaf
Width of door leaf	0.75 m to 1.50 m per door leaf
Space required below the door frame	20 mm
Setting up angle	max. 115°
Electromagnet (only with SR 2000 E model)	24 VDC/42 mA

### Order Information

SR 2000 L door sequence selector (long version)	part no. 500430
SR 2000 EL door sequence selector (with magnetic hold-open)	part no. 500431
SR 2000 K door sequence selector (short version)	part no. 500435
SR 2000 EK door sequence selector (with magnetic hold-open)	part no. 500436