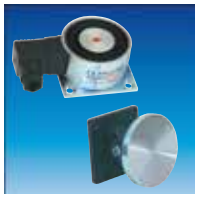
Hold-Open Systems
Fire Door Control Solutions



Dear customer,

This catalog contains plenty of detailed data about many of our products. Although we have carefully checked all the information we cannot guarantee that this catalog contains no mistakes and take no responsibility for the correctness of the data/details provided.

Certain details of all technical products - even when they are manufactured very accurately – have tolerances.

Please note that all measurements (unless stated otherwise) are in inch, pound, pound force etc. As the measurements have been converted from metric numbers, the numbers are nearly always odd numbers.

Technical changes may happen and are not subject to notice.

We appreciate your interest and promise to furnish you immediately with detailed information to any of our other products by fax, email or letter post.

DICTATOR is well known worldwide for its close personal contact to his customers.

We want to become your partner, too.

Management
DICTATOR U.S., Inc.

State: February 2020

Hold-Open Systems - Components, Function, Regulations

Depending on their use and size, buildings are divided into fire areas to prevent a possible fire from spreading in the whole building. As a matter of principle openings in the walls between the fire areas are not allowed.

For this reason doors which connect the fire areas have to be approved fire protection closures which always close on their own, i.e. after every opening they close automatically.

However, the normal course of operations often requires that doors stay open in order not to interfere with or even endanger the movement of people and material by the automatic closing.

For this holding open only approved hold-open systems may be used. They ensure in the case of a fire that the fire protection closures close automatically.

When installing a hold-open system, it is mandatory to observe the statutory demands.

DICTATOR will assist you with professional advice and also offers the necessary training.

Components of a Hold-Open System

Components	DICTATOR product	Page sqq.
Central/Power pack	RZ-24 central	07.009.00
Fire detectors	RM 4000, WM 4000 Only for replacement in existing systems: RM/WM 2000, RM/WM 3000+	07.021.00 07.029.00
Electromagnets	different models	07.039.00
Counter plates	different models	07.069.00
EX hold-open systems	RZ-24 central with ex-proof fire detectors	07.033.00
Other components	hand switches, mounting accessories etc.	07.075.00

Hold-Open Systems - Structure and Functioning

Fire doors are still often kept open by ***wooden wedges*** to make passing easier - although this is ***forbidden***. In the case of a fire this wedging or blocking prevents the closing of the door. The safety of the object is no longer ensured, because nothing would hinder a fire from spreading. Installing a hold-open system which meets the demands is the only legal action to keep fire protection closures as long open as the normal use requires it and at the same time to ensure their reliable closing in the event of a fire.

DICTATOR provides approved hold-open systems for the most different areas.

Structure of a Hold-Open System

The following **components** form a hold-open system:

- **Power supply** and **tripping device (1)**: The central is the heart of the hold-open system. It ensures the 24 VDC power supply of the components and evaluates the fire detectors.
- **Fire detectors (2)**: Smoke and/or heat detectors relay a fire immediately to the central and thus ensure the reliable tripping of the hold-open system. As the case may be special regulations may apply to the use of heat detectors.

  The necessary number of fire detectors and their mounting position has to be determined in accordance with the national prescriptions.
- **Hold-open system (3)**: An electromagnet with the corresponding counter plate keeps the door open. In the event of an alarm or when the hand switch is pressed, the magnet will release the door which then will close automatically.
- **Hand release switch (4)**: It must be possible to trigger a hold-open system also manually, independently of the fire detectors. On the one hand for testing the functioning of the hold-open system and on the other for closing the fire protection closure when it is no longer necessary to keep it open. It is important that the switch is always well visible and in the immediate vicinity of the door.

In Germany the general approval or the type approval of the building authorities regulate the installation of a hold-open system. In European countries without national prescriptions the EN 14637 serves as orientation. The prescriptions also direct the number and the positions of the fire detectors and the position and type of the hand switch.

IMPORTANT: You may use together only components of hold-open systems, the faultless cooperation of which has been verified by tests and is shown by the corresponding documents of the manufacturer and testing institutes.

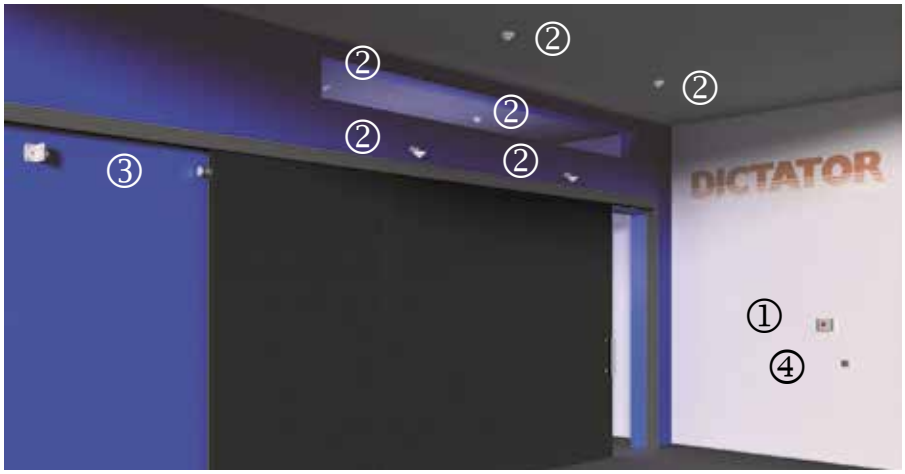
Example of a hold-open system on a hinged door

Hold-Open Systems - Structure and Functioning, cont.

As a matter of principle you can install a hold-open system on all fire protection closures according to the specification of the door manufacturer. They should always be installed when open fire protection doors essentially simplify the movements in the building.

Due to the great importance of the faultless functioning of a hold-open system, only qualified persons may approve/accept, test and maintain it. A qualified person has to confirm the correct first placing into operation on a defined plate in the immediate vicinity of the hold-open system. The operator has then to regularly check the functioning.

Example of a hold-open system on a sliding door



Functioning of a Hold-Open System

The fire protection closure (fire door) is kept open by the electromagnet of the hold-open system. The fire detectors whose number is defined by the prescriptions, monitor the area around the opening in the fire wall. Normally both the electromagnet and the fire detectors function with 24 VDC. The power pack of the power supply and the tripping device (see previous page) changes the 230 VAC mains voltage into 24 VDC and supplies the necessary power.

As soon as a smoke detector detects smoke or a heat detector a fast increase in temperature, it switches to alarm. This alarm causes the immediate interruption of the power supply of the electromagnet which no longer keeps the door open. The door is closed by its approved closing device (spring hinge, door closer, counter weight, spring rope pulley etc.), so that fire and smoke cannot spread.

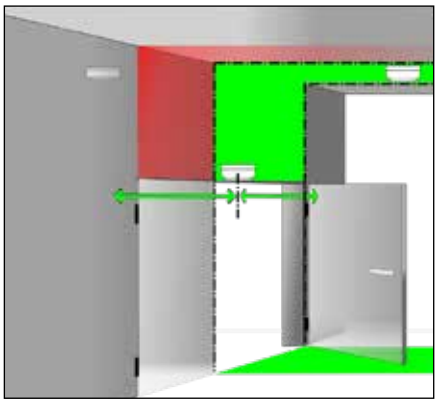
Qualified Person for Hold-Open Systems - DICTATOR Trainings

Qualified person for hold-open systems are called people who on the one hand have a corresponding professional training or experience and on the other hand are authorized by a test certificate of the manufacturer for working on the respective hold-open system.

DICTATOR offers trainings to become a qualified person for hold-open systems, where we impart all relevant information about the general prescriptions as well as about the DICTATOR hold-open systems, their functioning, their installation and maintenance. At the end of the training every participant has to pass a test to receive the necessary certificate. On our web page we announce facility based trainings, but we also offer individual trainings at customers.

Support During Planning

Of course the "delivery" of DICTATOR also includes the free of charge advisory service when designing the correct hold-open system. This way we ensure together with you that the hold-open system always corresponds to the prescriptions and above all meets its object, i.e. to protect buildings, material assets and last but not least human life!



Installation Regulations

In Germany the installation directives for fire detectors are to be found in the respective approval of the building authorities or the general type approval. In other countries apply the corresponding directives for hold-open systems. In case there exist no directives, in Europe the EN 14637 serves for orientation.

In the following you will find the prescriptions about the number and the mounting position of fire detectors in Germany.

Determining the Required Number of Detectors and Their Mounting Position

The following diagrams will help you to choose the correct number 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 1.64 ft and at most 8.2 ft.

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 3.94 inch 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 6.56 ft from the detector**. If the opening width exceeds 13.12 ft, 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 16.4 ft, the corresponding ceiling detectors can be replaced by detectors being mounted on the wall on cantilevers at least 11.48 ft above the wall opening. The horizontal distance between wall and the centre of the detector has to be 1.64 ft.

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

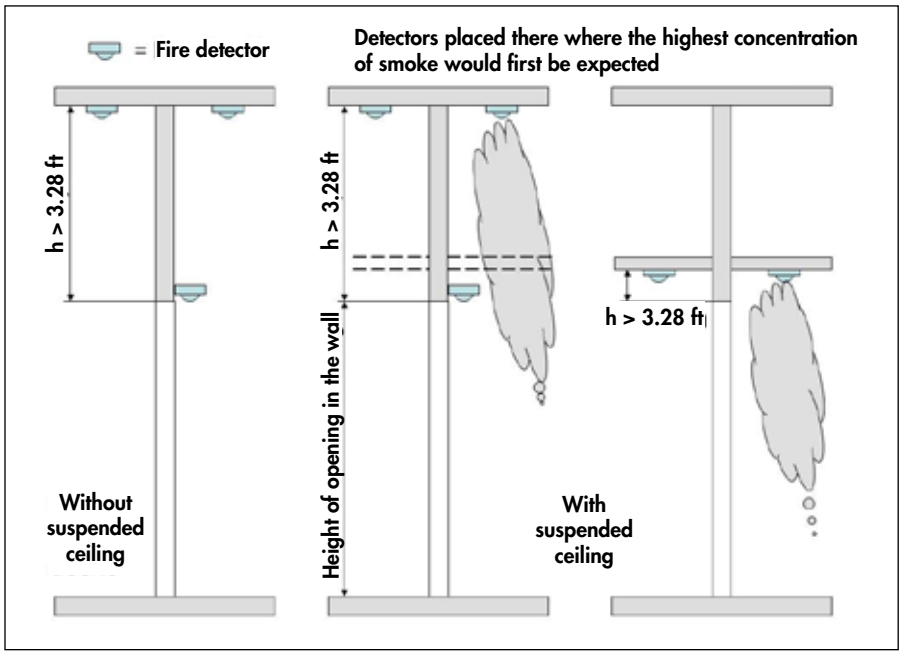
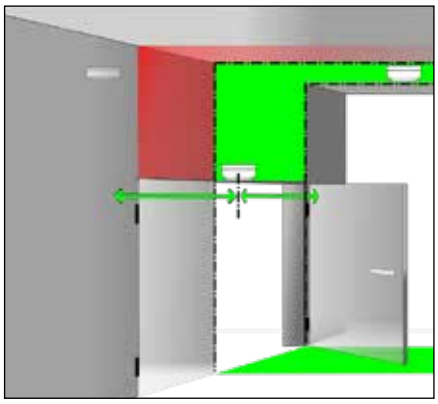


Diagram 1: Decisive height of the lower surface of the ceiling



Installation Regulations, cont.

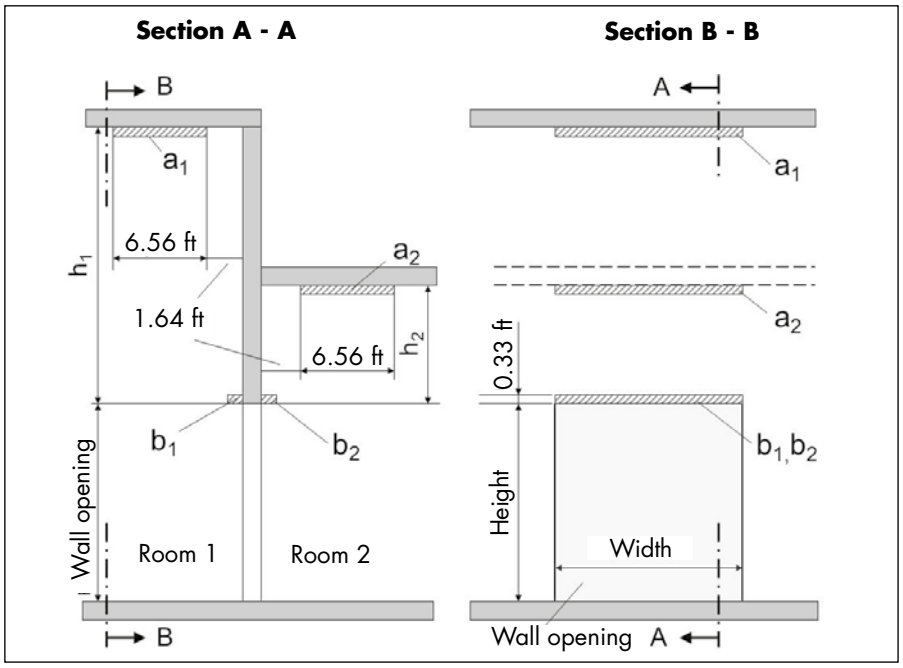


Diagram 2: Installation areas

Line	Height of ceiling above lower edge of lintel	Installation areas (b = b1 or b2)	Min. number of detectors required*)
1	h1 and/or h2 > 3.28 ft	a1+ a2 + b	2 ceiling and 1 lintel detectors
2	h1 and h2 ≤ 3.28 ft	a1+ a2	2 ceiling detectors
3	as line 2, but swing door with door width up to 9.84 ft	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.

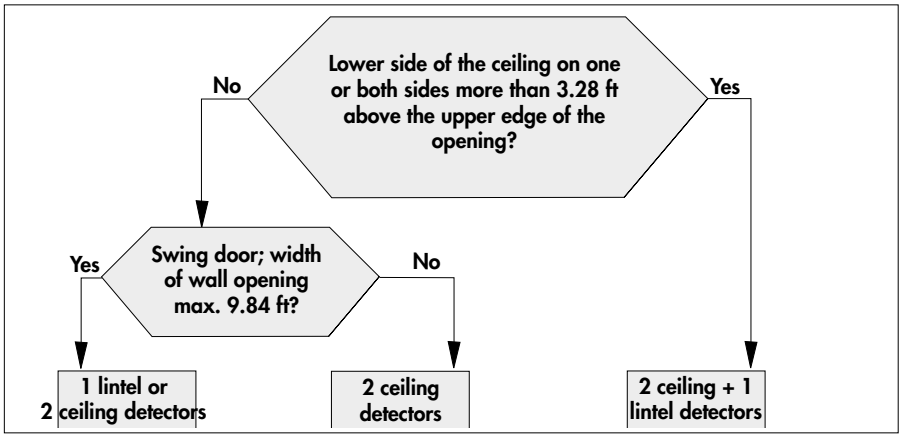
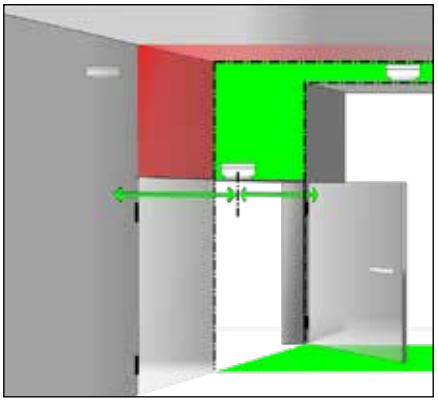


Diagram 3: Decision diagram



Electrical Installation, Other Prescriptions

The installation of the hold-open system on site should be carried out by professionals who are familiar with all the necessary tasks, the corresponding local and national prescriptions and have the necessary certificates.
They have to obey the installation instructions of the manufacturer of the components of the hold-open system.
The technician as well as his company are responsible for the correct installation of the hold-open system. The same applies to handing over the acceptance documentation of the installation and the product information about the installed components to the operator (log book).

Other Prescriptions

In Germany the approvals and type approvals of the building authorities contain more effective prescriptions. **We place them at your disposal at www.dictator.de.** You also have to observe the DIN 14677.

In other **European countries** apply the directives of the **EN 14637 - together with national prescriptions** (in case of doubt the national prescriptions have priority).

Controls, Inspection, Maintenance

Testing of the functioning
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 or trimonthly basis. For the actually required intervall you have to check the national inspection specifications. Every instructed person can perform this functional test according to the inspection specifications given in the log book (see below).

Controls and maintenance
The operator is also 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.

Log book / Maintenance history
The prescribed log book serves as a proof for the operating licence and the required maintenance of the hold-open system.

Contents of the log book:
- Location of the hold-open system in the building
- Installed components of the hold-open system
- Acceptance protocol
- Documentation of the periodic controls and maintenance services
- Instruction for the functioning tests and maintenance

DICTATOR will be happy to provide you free of charge with a digitised specimen log book in order that you will be able to compile the required documentation about the systems always in accordance with law.

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.

Replacing Components of Existing Hold-Open Systems

When a **component of a hold-open system installed prior to 15 July 19**, e.g. a smoke detector, is defective and has to be replaced, the **replacement** may only be a smoke detector which was included at the date of installation in the approval of that time - even when now the approval is no longer valid. If this smoke detector is no longer available, the complete system has to be replaced.

RZ-24 Central Unit for DICTATOR Hold-Open Systems

The RZ-24 central unit is the **core** of the DICTATOR hold-open system. **This one device combines all essential functions**, so that in the simplest case you only have to connect fire detectors and electromagnets.

- It changes the 230 VAC mains supply in 24 VDC for feeding the connected fire detectors and electromagnets.
- It evaluates the signals of the fire detectors.
- In the event of an alarm or a failure it interrupts the power supply of the electromagnets and thus automatically initiates the closing of the fire/smoke door.
- In case of an alarm or a failure (e.g. fire detector defective or removed, line break, short circuit etc.) also a (disengageable) acoustic signal sounds.
- For resetting the system after an alarm you use the RESET key on the membrane keys.
- The RZ-24 features a "Tür schließen" (= close door) key for closing the door. If required, it is of course possible to connect external release switches.

Besides this the RZ-24 offers **many more functions and options**.

Technical Data
Standard Version

Supply voltage	85 VAC - 265 VAC, 50/60 Hz
Power consumption	about 30 W, own consumption about 30 mA
Secondary output voltage	24 VDC ±5 %
Secondary total load	0.9 A (supply of fire detectors, electromagnets and other consumers)
Operating temperature	-13 °F to +104 °F
IP rating	IP 64 (when using cable inlets)
Additional switching contact	potential-free contact 8 A/<250 V~/AC1 (relay released = tripping)

RZ-24 Central Unit with Power Pack and Tripping Device

The RZ-24 has been tested and approved by the Deutsches Institut für Bautechnik (German Institute for Building Engineering). It also meets the demands of the EN 14637.

Due to its **high performance (900 mA)** even large hold-open systems can easily be operated by one central unit.

As an option the RZ-24 central unit is available in a **bigger casing** (part no. 040554) (dimensions 7.95 x 5.98 x 3.54 inch). This offers enough room for additional components as e.g. relay circuit boards or an emergency power supply (see Additional Functions - Optional).

Standard Version

- **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**.
- **Tripping** the hold-open system by a **fire alarm central** (requires a potential-free contact).
- **RESET** of the complete hold-open system:
  First reset the fire detectors by the hand release switch and then the RZ-24 central by its integrated RESET switch.
- **Automatic RESET after a power cut (**NOT after a manual tripping or a fire alarm !!)
- **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 the event of an alarm to allow the mechanic closing of the door (by a door closer, a closing spring or a counterweight).
- **Status indications** for normal operation and alarm on the cover of the central.

Additional Functions - Optional

Rechargeable battery buffering: This allows to bridge - depending on the consumption of the connected fire detectors, electromagnets and other consumers - up to 12 minutes when the 230 VAC supply fails (usable capacity 0.022 Ah).

- **Additional relay contacts** (circuit boards with one, two or four relay contacts, each a changeover contact 2 A/30 VDC).
- Additional circuit board for the **automatic reset** of the RZ-24 central after a power cut and after fire alarm (however, the tripping fire detector has to be reset additionally by the hand switch).
- More options on demand.

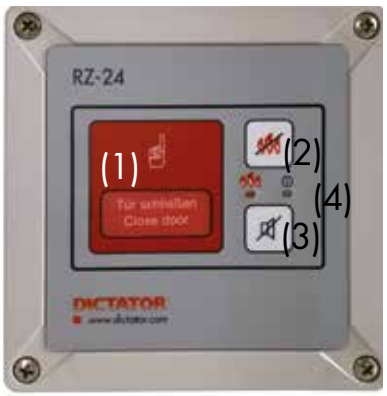
Indication and Operating Elements of the RZ-24

Keys

- Integrated hand release key (1)
- Integrated RESET key (2)
- Key quitting horn (4):
  switches the horn off after an alarm.

Status indications

- by 2 LEDs on the front panel (4):
  LED green "operation" (normal operation)
  LED red "alarm" (error or alarm)



RZ-24 Central Unit - cont.

The door approvals, standards and prescriptions of the accident prevention regulations/ safety at work may stipulate the **optical and acoustical signalling of the closing.** This is easily possible with the RZ-24. DICTATOR provides a signaller (part no. 700171) for this purpose which features besides the red LED warning flashlight also a siren which can be switched off - and an extremely low power consumption.

In some countries as e.g. Austria it is prescribed that in underground car parks the warning signal has to start before the actual closing to warn the user against the possible danger. For such an application, on demand an additional time relay is available.

Inputs/Outputs

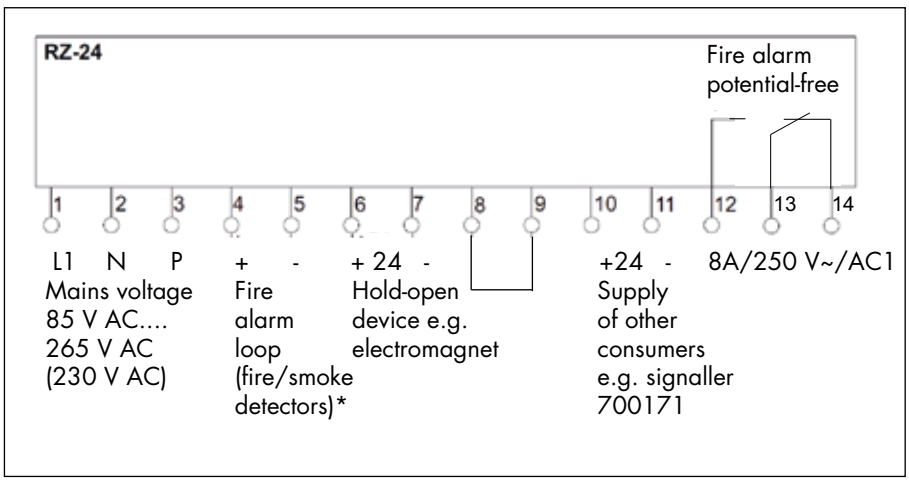
Inputs

- Mains connection
- Fire alarm loop: 24 V feed-in of the smoke/heat detectors and evaluation of the status informations
- External hand release switch (is integrated in the fire alarm loop)

Outputs

- Feed-in of the hold-open system (e.g. electromagnets)
- Feed-in of additional consumers as e.g. external signallers. They allow to signal the closing of a fire protection closure during alarm acoustically and also optically.
- Potential-free relay contact for relaying the tripping (only for hold-open systems without door operator(s)).

Block Diagram



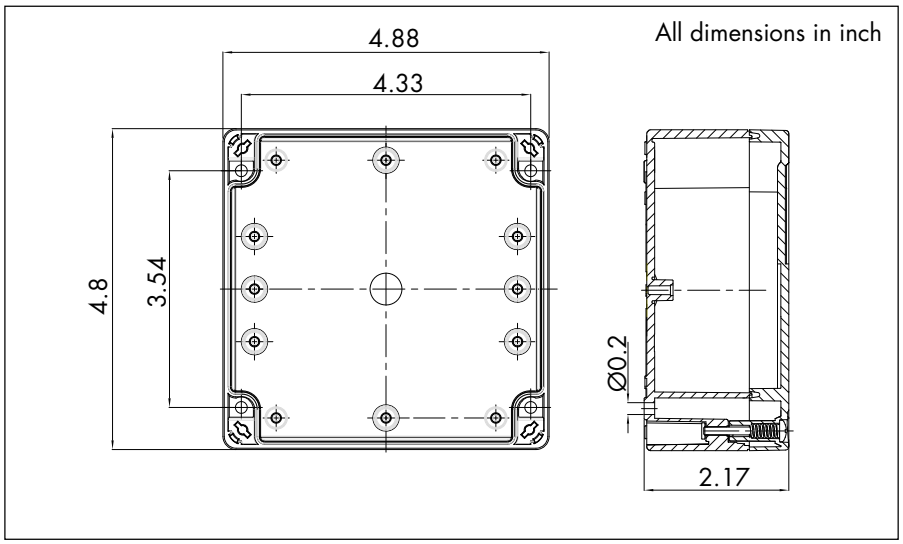
* In the factory a resistor of 3.9 kΩ is inserted at the terminals 4 and 5. Before connecting the fire detectors this resistor has to be taken out and then inserted in the last detector of the detection loop.

RZ-24 Central Unit - cont.

Important Notes:

- When determining the number of required fire detectors, it has to be taken into consideration that in Germany an additonal fire detector has to be installed near the RZ-24, when the central unit is not placed within the detection range of one of the detectors mounted on the door!
- The scope of supply of the RZ-24 also contains a 3.9 kΩ resistor. This is needed when connecting the fire detectors RM 4000/WM 4000.

Dimensions Casing Standard Version



Dimensions of the RZ-24 in the bigger casing: 7.95 x 5.98 x 3.54 inch

Installation Information

The casing provides 4 cable inlets M16 with IP 64 screwed cable glands at its bottom. The larger casing provides 6 cable inlets. If necessary, you can fix the casing with the cable inlets pointing upwards. In this case just turn the cover around. However, with the cable entries from above, the IP rating isn't any longer IP 64.

Additional Functions

By means of different additional components you can realize more functions. The description of the most important components can be found on the following pages. Among these are the rechargeable battery buffering, a time relay, the use of the RZ-24 as a signal control, additional signal contacts etc.

It would be our pleasure to assist you in choosing the components.

Order Information

RZ-24 central unit with power supply and tripping device	part no. 040553
RZ-24 central unit in large casing	part no. 040554

RZ-24 Central Unit as Signal Control

The RZ-24 central unit also allows to control a siren and a signal light during the closing of a fire door. Acoustic and optical warning signals are used especially for power-operated doors where the demands of the EN 12604 have to be observed.

Functioning

The signallers are activated the moment when the power supply of the hold-open system is cut off and the door starts to close. For switching off the signallers after the door has been closed, exist three possibilities:

- Installation of a time relay circuit board (part no. 040562), where you can adjust the time until switching off (see page after next).
- Installation of an additional limit switch in the closed position.
- Manually by pressing the RESET key on the cover of the RZ-24.

The number of the connectable signallers depends on the power consumption of the signallers and the other components of the hold-open system. DICTATOR supplies the following signaller with an extremely low power consumption.

If the signaller(s) shall function also in case of a power cut, you have to use the RZ-24 central unit in the large casing (part no. 040554) and in additon the emergency power supply (part no. 040555) (see information on the following page). The emergency power supply is installed in the casing of the RZ-24 and simply plugged in the main circuit board.

The RZ-24 is also available as signal control with the time relay circuit board and the emergency power supply already installed (part no. 040561).

Signaller

We recommend to use the signaller, part no. 700171, together with the RZ-24 central unit. It comprises a siren as well as a warning flashlight.

The volume of the siren can be adjusted. If necessary, the siren can also completely be deactivated, e.g. when a signaller is mounted on each side of the door for making sure the warning light is seen everywhere. In this case it normally is enough that only one siren sounds.

Technical Data Signaller

Voltage	24 VDC
Power consumption	26 mA when siren activated, 6 mA when siren desactivated
Volume	about 100 dBA, can be reduced by the integrated potentiometer
Flashing frequency	1 Hz
Colour	red
IP rating	IP 65
Dimensions Ø x h	3.84 x 4.09 inch

Order Information

Signaller consisting of red LED flashlight and warning siren which can be switched separately, IP 65	part no. 700171
Time relay circuit board for installation in the RZ-24 (large casing!)	part no. 040562
Emergency power supply 0.022 Ah	part no. 040555
RZ-24 central unit in large casing	part no. 040554
RZ-24 central as signal control in large casing with the time relay circuit board and the emergency power supply	part no. 040561

Emergency Power Supply for the RZ-24

The emergency power supply allows for a short time to buffer the hold-open system during a power cut. The length of this hold-up time depends mainly on the power consumption of the connected components.

General Information

When using this emergency power supply, the RZ-24 central unit has to be in the large casing. In this casing is enough room for placing the battery pack. Its connection cable is simply plugged in the provided jack on the printed circuit board of the RZ-24. During normal operation the battery pack recharges automatically.

Charging time: about 1 hour for 80 % of the capacity, about 4 hours for 100 % of the capacity.

Hold-Up Time

The output of the battery pack is 0.022 Ah. All figures given in the following for the length of the hold-up time are only for orientation!

Load at $U_{Nominal}$ 24 VDC	**Hold-up time**
70 mA + 30 mA own consumption = 100 mA (0.1 A)	about 13 minutes
140 mA + 30 mA own consumption = 170 mA (0.17 A)	about 7 minutes, 45 seconds
280 mA + 30 mA own consumption = 310 mA (0.31 A)	about 4 minutes, 15 seconds

Notes:
- The own consumption of the RZ-24 is 30 mA.
- The fire alarm loop of the RZ-24 sets off at a tension of about 16 VDC.
- The hold-up times depend on the charging state of the emergency power supply and on the ambient temperature.

Simplified calculation formula:
Hold-up time in seconds = 80/load [A]

Example:
Hold-open system with RZ-24 and 4 smoke detectors RM 4000 and 1 electromagnet EM GD 70:
RZ-24: own consumption 0.03 A
4 x RM 4000: 4 x 95 µA = 380 µA = 0.38 mA = 0.00038 A
Electromagnet EM GD 70 = 71 mA = 0.071 A
Total consumption: 0.101 A
Hold-up time = 80/0.101 A = 792 seconds (about 13 minutes)

Order Information

Emergency power supply for installation into the RZ-24 central unit with large casing	part no. 040555
RZ-24 central unit in large casing	part no. 040554

Other Additional Components/Functions for the RZ-24

Besides the standard functions the RZ-24 central unit offers many more possibilities which can be realized by additional components. In some cases these require the version with the large casing.

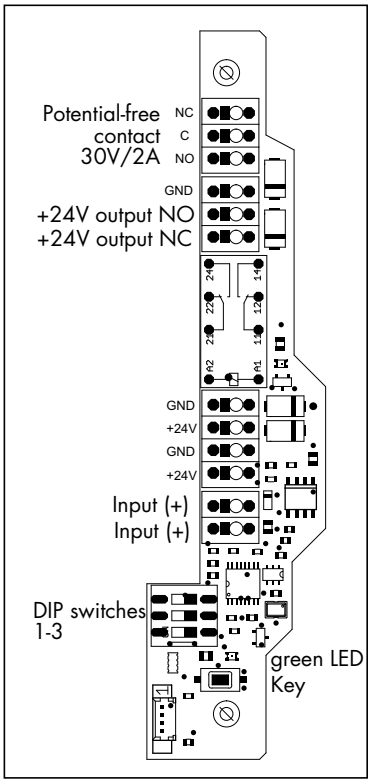
Time Relay Circuit Board

The time relay circuit board is incorporated into the RZ-24 central unit. Therefore, together with a time relay circuit board you always have to use the RZ-24 with the large casing.

By means of the time relay circuit board you can implement different time-controlled functions, as for example:

- Switching off the signalling after a certain time (e.g. when using the RZ-24 as signal control).
- Signalling that the door will start closing before long (prescribed e.g. in Austria for doors in underground car parks) - release delay.

The desired function and the period are adjusted with the help of 3 DIP switches and a programming key. A green LED signals a successful entry.



Technical Data Time Relay Circuit Board

Relay	24 VDC, 25 mA
1 changeover contact	2 A, 30 VDC
1 output	24 VDC, max. 2 A, with potential
Selectable functions	on-delay, power-off delay, interval with signal on, interval with signal off, symmetrical flasher (starting pulse on), symmetrical flasher (starting pulse off), pulse shaper
Adjustable periods	hours : minutes: max. 96 h : 59 min minutes : seconds: max. 59 min : 59 s 100 milliseconds : 10 milliseconds: max. 10000 ms : 1000 ms
Dimensions	4.41 x 1.06 inch

Order Information

Time relay circuit board, relay 24 VDC/25 mA	part no. 040562
RZ-24 central unit in large casing	part no. 040554

More Additional Components/Functions for the RZ-24

Continuation

Additional Circuit Board for the Automatic Reset of the RZ-24

After every power cut or fire alarm the complete hold-open system has to be reset. Two steps are necessary:

- Resetting the fire detectors by pressing the hand release switch,
- resetting the complete hold-open system by pressing the RESET key.

Only when these two steps have been performed, the electromagnets are again supplied with current and the doors can be locked in the open position.

If the doors are used from many different people who are not familiar with the details of the hold-open system, the additional circuit board for the automatic reset of the RZ-24 should be used. It is simply plugged on the main circuit board of the RZ-24, the small casing being sufficient.

Functioning:

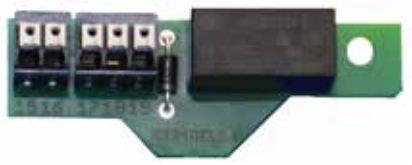
- After a power failure, releasing the system by a hand switch or removing and inserting again a fire detector: ***automatic, complete RESET of the whole hold-open system.***
- After a fire alarm triggered by a fire detector: First is required a ***manual reset of the detectors*** by the hand release switch. Then the RESET of the ***central unit*** is performed ***automatically***. As the RZ-24 central unit is not always within reach, the RESET key, however, is on its casing, the additional circuit board not only makes the reset easier but also saves time.

The reset command is automatically carried out every 8 seconds.

Relay Circuit Board with 1 Additional Contact

By default the RZ-24 central unit has a potential-free contact for passing on the tripping. If this is not sufficient, an additional circuit board with a relay contact can be refitted (on demand also models with 2 and 4 contacts). Generally we recommend to choose the RZ-24 with the large casing when installing this additional circuit board.

Technical Data:
1 relay 24 VDC
1 potential-free changeover contact 2 A
Dimensions: 2.17 x 0.75 inch



Order Information

Additional circuit board for the automatic reset of the RZ-24 central unit after a power cut and a fire alarm	part no.040556
Relay circuit board for the RZ-24 central unit with an additional relay contact	part no. 040559
RZ-24 central unit in large casing	part no. 040554

RZ-24-05 Central Unit, the "Design Solution" for Hold-Open Systems

The RZ-24-05 central unit is ideal for all hold-open systems in which particular emphasis is placed on design or which have to meet special aesthetic and architectural requirements. The RZ-24-05 is so small that it fits easily into a standard flush-mounted box. The hand switch integrated in the RZ-24-05 central fits in most switch ranges.

Especially for hold-open systems that are subject to high loads, such as in schools, kindergartens, hospitals or other public buildings, separate (not integrated in overhead door closers) robust electromagnets are the prerequisite for a long service life of the hold-open system. Combined with the small control unit, which fits perfectly and inconspicuously into the existing electrical installation, DICTATOR thus offers a sustainable design solution that prevents high repair and maintenance costs.

Despite its small dimensions, the RZ-24-05 has all the essential functions of a central unit for hold-open systems. And it provides the very high output of 500 mA for connected consumers.

Technical Data

Supply voltage	85 - 264 VAC
Power consumption	about 14 W, own consumption about 40 mA
Secondary output voltage	24 VDC ±10 %
Secondary total load	permanently 0.5 A (supply of fire detectors, electromagnets and other consumers)
Operating temperature	32 °F to 104 °F
IP rating	IP 30

RZ-24-05 Central Unit - Functions and Installation

The RZ-24-05 has been tested and approved by the Deutsches Institut für Bautechnik (German Institute for Building Engineering). It also meets the demands of the EN 14637 on hold-open systems.
The standard version of the RZ-24-05 is designed for installation in a commercially available flush-mounted box with a diameter of 2.36 inch. Normally, the frame of the switch system used in the object is used. However, a frame is also available if required.

Standard Version

- **Manual release** of the hold-open system by the hand release switch integrated in the RZ-24-05.
- **Tripping** the hold-open system by connected **fire detectors**.
- **Tripping** the hold-open system by a **fire alarm central** (requires a potential-free contact).
- **RESET** of the complete hold-open system via the keypad of the RZ-24-05:
  First reset the fire detectors by the hand release switch and then the RZ-24-05 central by its integrated RESET switch.
- **Automatic RESET after a power cut or actuating the hand switch** (if required, adjustable in the central unit by means of a DIP switch)
- **Integrated excess-current protection**: If too many consumers are connected, the power supply automatically cuts off.
- **Status indications** for normal operation, alarm and various fault conditions on the keypad

Installation Instructions

Normally, the RZ-24-05 is installed in a standard flush-mounted box (not included in the delivery, see figure below).

A model provided by the customer can be used as a frame for the circuit board with hand switch (IMPORTANT: switch cut-out 2.17 x 2.17 inch, without rounded corners!).

Indication and Operating Elements of the RZ-24-05

Keys
- Integrated hand release key (1)
- Integrated RESET key (2)

Status indications
3 different LEDs in the cover (3) (explanation from top to bottom):
- LED "Release": lights up red in case of alarm
- LED "Ready": lights up green when the detector loop is ready for operation
- LED "Error": by permanent lighting or flashing with different frequencies different errors are indicated!

RZ-24-05 - Connection

When carrying out the electrical connection work, please note that due to the small size of the board and terminals, a special release tool (part no. 040565) must be used for the miniature terminals to prevent damage. This release tool can also be obtained from DICTATOR.

For connection, the wires are simply plugged into the corresponding terminals.

Important note: A 3.9 kΩ resistor is already included with the RZ-24-05. This is required when connecting the fire detectors RM 4000/WM 4000.

Inputs/Outputs

The RZ-24-04 has 14 connection terminals for cables with a maximum of 0.0295 inch^2 (= 0.75 mm^2).

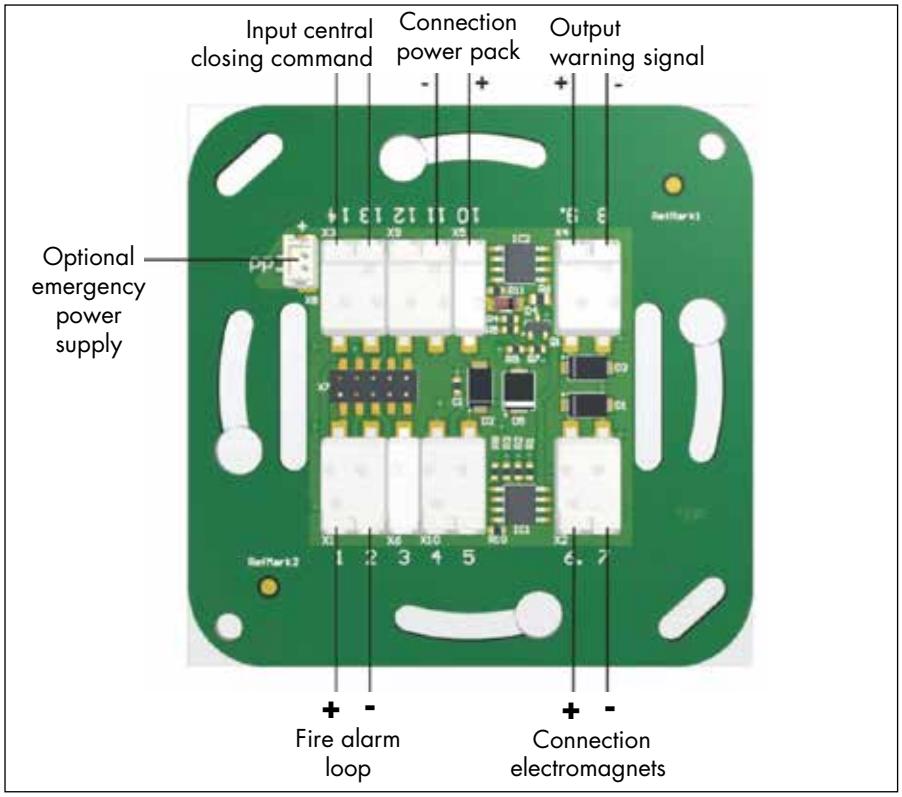
Inputs

- Mains connection
- External reset or central closing

Outputs

- Supply of the fire alarm loop with fire and/or heat detectors (with terminating resistor 3.9 kΩ
- Supply 24 VDC for the electromagnets
- Output +/- for warning signal

Overview Connection Terminals



Central RZ-24-05 - Accessories, Order information

If no cover frames of the switch system used by the customer are used when installing the RZ-24-05, the cover frame can also be supplied by DICTATOR.

In addition to the normal cover frame, also a cover frame with transparent flap is available. According to the type approval of the DIBt it is permissible to protect a hand switch against misuse by a suitable transparent cover (e.g. flap). A further advantage is that accidental operation of the manual release button is prevented in the case of heavy public traffic.

Cover frame with transparent cover

Emergency Power Supply

If there are occasional short interruptions in the power supply where the hold-open system is used, an additional emergency power supply can be used.

In this case please contact us. It is important that you tell us the exact number of connected consumers and their power consumption.

Order Information

RZ-24-05 UP central unit, 0.5 A, for switch systems (surface or flush-mounted)	part no. 040563
Cover frame for RZ-24-05 for installation in flush boxes	part no. 040566
Cover frame, polar white, with transparent cover for RZ-24-05 for installation in flush boxes	part no. 040567
Tool for removing wires from the miniature terminals	part no. 040565

RM 4000 Smoke Detector

For Hold-Open Systems - with the RZ-24 Central

The DICTATOR RM 4000 smoke detector is part of hold-open systems on fire/smoke protection closures. This optical smoke detector features a special sensing chamber and uses algorithms to filter out transients. This combines to increase detection reliability and reduce false alarms. An automatic drift compensation automatically compensates for changes caused by the environment. If the detector is dirty to the point where it can no longer compensate, it will immediately change to alarm and the fire closures will reliably be closed.

The RM 4000 is operated together with the RZ-24 central which supplies the necessary voltage and also evaluates the detector. The detector itself doesn't anymore require a relay, thus reducing the costs of the hold-open system, also its electricity costs.

An integral indicator LED with 360° visibility indicates the single operating states by two colours (red/yellow) and different flashing frequencies.

The RM 4000 can be used in a temperature range from -40 °F to +158 °F.

The detector has been tested according to EN 54-7.

Technical Data

Supply voltage	8.5 to 33 VDC
Power consumption	Ø quiescent current + switch-on surge current at 24 VDC: 95 µA alarm current at 24 VDC: 40 mA
Sampling frequency	once every 4 seconds, photo-electric sensor with automatic detection and adaption of the sensitivity
Alarm indicator	integral LED (red/yellow) for status indication
Operating temp.	-40 °F to +158 °F (no condensation or icing!)
IP rating	IP 23D
Material casing	moulded in white polycarbonate

Dimensions, Mounting Instruction for the Base

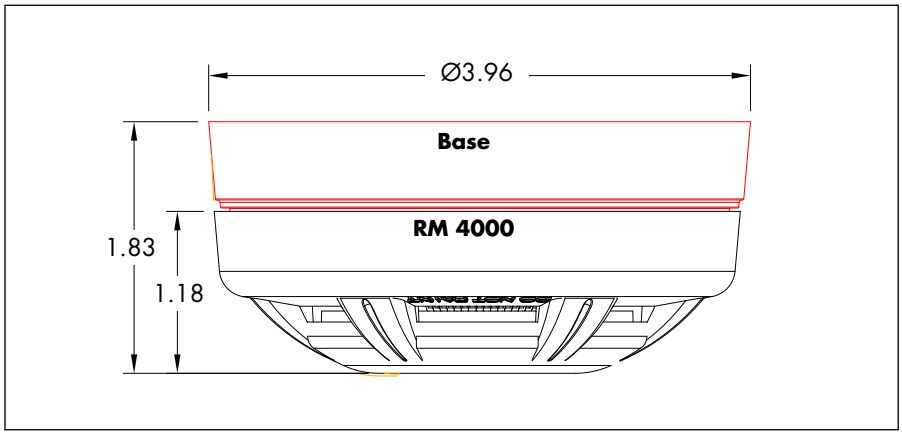
The alarm evaluation of the series RM 4000 detectors is effected in the RZ-24 central. Therefore these smoke detectors no longer require a special relay base.

The standard base has been designed especially to make installation fast and simple.

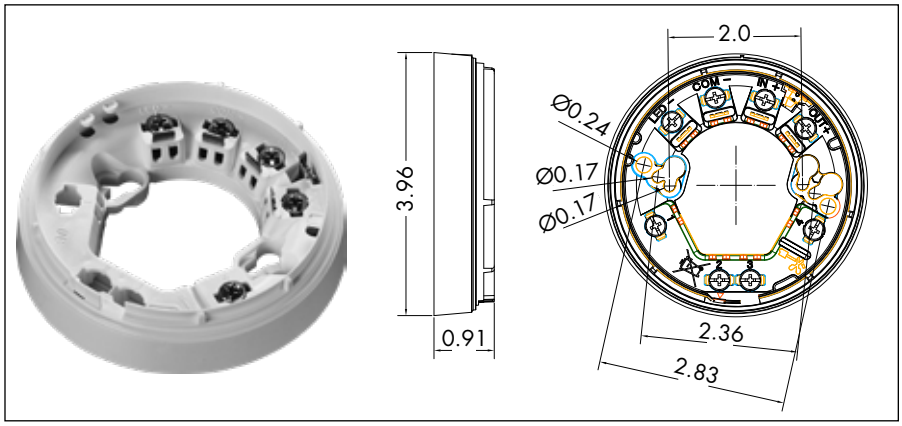
For special applications also a heated base is available on demand.

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.

RM 4000 Smoke Detector



Standard Base



The specially formed fixing holes in the base allow a simple and fast installation. Two hole distances are available: 2.01 inch and 2.26 inch. On the exterior of the base is a marking which indicates the position of the LED once the detector has been fitted. This allows to mount the bases in such a way that the LEDs of the detectors will all face the same direction.

Wiring is possible both from the back or from the side (knock-outs in the base).

A guide on the base interior indicates the length of cable to be stripped. Five terminals are provided for the cables, four being grouped together for ease of termination. The terminal screws are captive screws and will not fall out of the terminals. The base is supplied with the screws unscrewed in order to avoid unnecessary work for the installer.

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

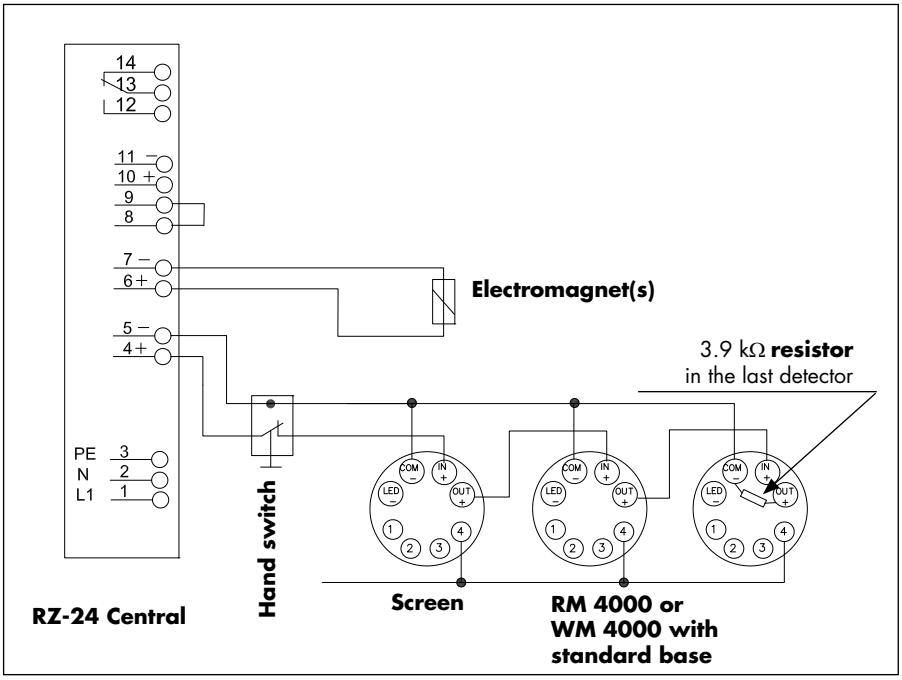
Electrical Connection, Status Indication

The number of the required lintel and ceiling detectors is determined by the effective directives in the respective country. In Germany it is based on the DIBt approval or the type approval. In European countries without national directives the EN 14637 serves for orientation.

The smoke detectors are wired in line. In the last detector of the loop a 3.9 kΩ resistor has to be installed.

The **hand switch** (if the RZ-24 central is not installed in a position where the hand switch on its cover could be used) needs to be placed in the wiring to the first detector. This allows for a simple, linear wiring.

Wiring Diagram



Status Indication

An LED indicates the different operating status of the RM 4000 smoke detector. Depending on the status it flashes in red or yellow.

LED red	LED yellow	Function
Flashes 1x/sec	No flash	After having applied power (or fitting the detector into the base): confirms the correct wiring. The StartUp feature lasts 4 minutes. During this **starting up phase** a fast functional test within 4 seconds is possible. During normal operation this lasts longer.
Permanently on	No flash	**Alarm**
No flash	No flash	**Normal operation**
No flash	Flashes 1x/sec **during** StartUp	If during the first 4 minutes after applying power or fitting the detector the yellow LED flashes instead of the red one, the detector has reached the **drift compensation limit**. It has to be replaced soon, if cleaning is in vain.
No flash	Flashes every 4 seconds **after** StartUp	Sensor **no longer functions properly** => detector has to be replaced immediately

Testing Regulations, Accessories, Order Information

Attention: Every month or as the case may be every three months the correct functioning of a hold-open system must be tested - if the approval document doesn't specify another period or other national regulations exist - and once a year a maintenance service has to be carried out by a person trained for this purpose. See also the detailed information beginning on page 07.003.00.

IMPORTANT: After latest 8 years the RM 4000 smoke detectors have to be replaced, even if they are still functioning without fault during the functional or maintenance tests. This ensures that the hold-open systems always are in full working condition and in the event of a fire will reliably trigger the closing of the doors.

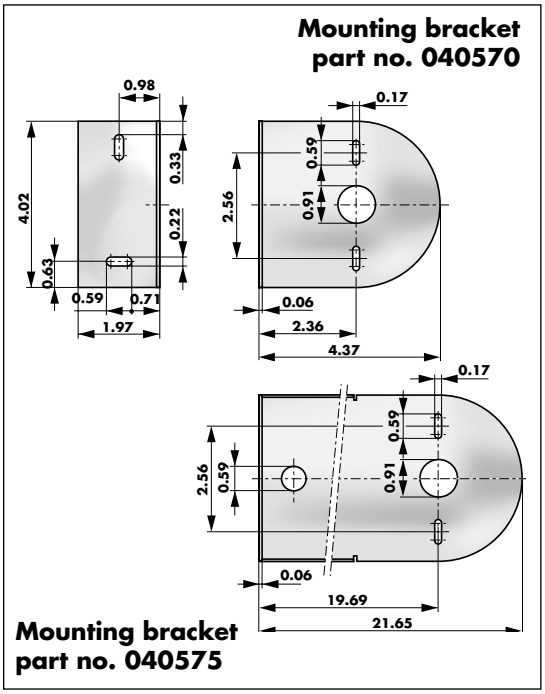
Accessories
Mounting Brackets

For fixing the RM 4000 as a ***lintel detector*** on the wall, a short mounting bracket is available (part no. 040570).

According to the requirements of the DIBt and the EN 14637 for installing a fire detector, **in exceptional cases it is allowed to mount instead of a ceiling detector a detector on the wall** (see page 07.006.00):

If the distance between the upper edge of the wall opening and the ceiling is more than 16.4 ft, the ***ceiling detector*** may be fixed on the wall on a cantilever (part no. 040575) at least 11.48 ft above the upper edge of the wall opening. Due to the construction of this mounting bracket the distance between the wall and the centre of the detector is exactly 19.69".

For the hole Ø 0.91" for the cable entry in the brackets DICTATOR supplies a membrane grommet (part no. 040577) as an option to additionally protect the supply cables to the fire detector. This membrane grommet should always be used for hold-open systems in hazardous areas.



Order Information

RM 4000 smoke detector with standard base (kit)	part no. 040860SET

Detector Accessories

Standard base	part no. 040862
3.9 kΩ resistor	part no. 040893
Bracket for fixing a lintel detector to the wall	part no. 040570
Bracket for fixing a ceiling detector to the wall, length 21.65"	part no. 040575
Membrane grommet, black, for cable entry in mounting brackets 040570 and 040575	part no. 040577

Other Accessories

RZ-24 central	page 07.009.00 et sqq.
Electromagnets with counter plates	page 07.039.00 et sqq.
Separate hand switch	page 07.077.00 et sq.

WM 4000 Heat Detector

For Hold-Open Systems - with the RZ-24 Central

The DICTATOR WM 4000 heat detector is a rate-of-rise detector. It responds not only when a fixed temperature has been reached but also when the temperature increases rapidly.

Heat detectors should be used if there is a danger of false alarms from smoke detectors caused by smoke or similar aerosols (e.g. dust) emitted during the normal process of working or production. However, you have to keep in mind that national directives may demand a further approval for heat detectors (e.g. in Germany heat detectors may not be used in escape routes).

The WM 4000 can be used in temperatures between -40 °F up to +158 °F. However, when reaching the static response temperature between 129 °F and 149 °F it will switch to alarm. On demand also heat detectors for other response levels are available.

The WM 4000 is operated together with the RZ-24 central which supplies the necessary voltage and also evaluates the detector. The detector itself doesn't anymore require a relay, thus reducing the costs of the hold-open system.

The detector has been tested according to EN 54-5.

Technical Data

Supply voltage	8.5 to 33 VDC
Power consumption	Ø quiescent current + switch-on surge current at 24 VDC: 95 µA alarm current at 24 VDC: 40 mA
Measurement of heat	by means of a thermistor, 1 measurement every 4 seconds
Operating temperature	A1R: static response temperature between 129 and 149 °F; operating temperature: -40 to +158 °F (without alarm)
Alarm indicator	integral LED for status indication
IP rating	IP 23D
Material casing	moulded in white polycarbonate

Functioning, Dimensions, Mounting Instruction for the Base

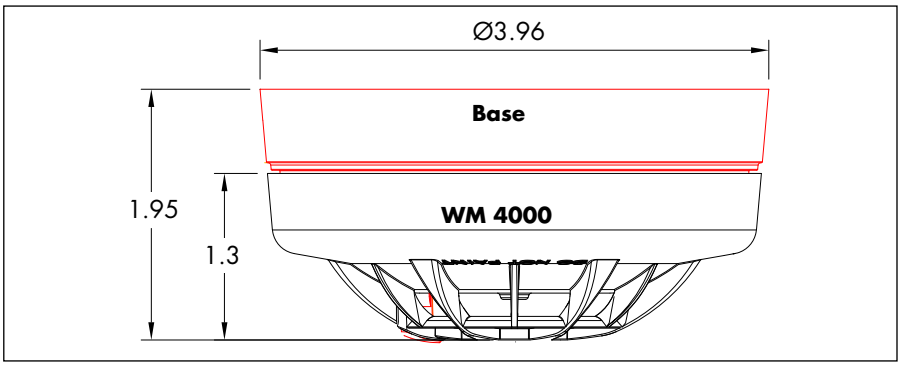
The WM 4000 is the standard model approved together with the RZ-24 central, class A1R according to EN 54-5:2001. In the event of higher ambient temperatures (>122 °F) other classes of the EN 54-5 (A1S, A2S, BR, CR, CS) with higher response levels are available. However, these classes have to be rated according to the national directives and where applicable, an additional approval procedure may be required for the individual hold-open system.

The alarm evaluation of the series WM 4000 detectors is effected in the RZ-24 central. Therefore these heat detectors no longer require a special relay base.

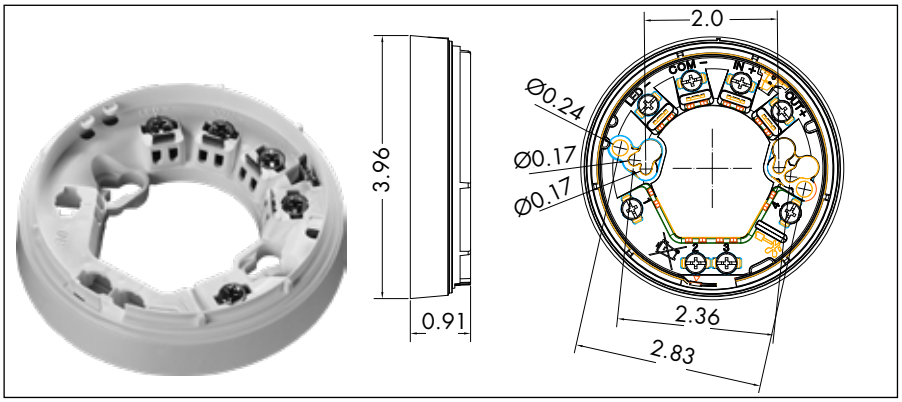
Functioning

Every 4 seconds the air temperature is measured. A microprocessor records it and compares it with the pre-set upper limit value. In the event of a temperature increase, it also checks the rate of rise. If it is too fast, the detector will also trigger an alarm.

WM 4000 Heat Detector



Standard Base



The specially formed fixing holes in the base allow a simple and fast installation. Two hole distances are available: 2.01 inch and 2.36 inch. On the exterior of the base is a marking which indicates the position of the LED once the detector has been fitted. This allows to mount the bases in such a way that the LEDs of the detectors will all face the same direction.

Wiring is possible both from the back or from the side (knock-outs in the base).

A guide on the base interior indicates the length of cable to be stripped. Five terminals are provided for the cables, four being grouped together for ease of termination. The terminal screws are captive screws and will not fall out of the terminals. The base is supplied with the screws unscrewed in order to avoid unnecessary work for the installer.

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

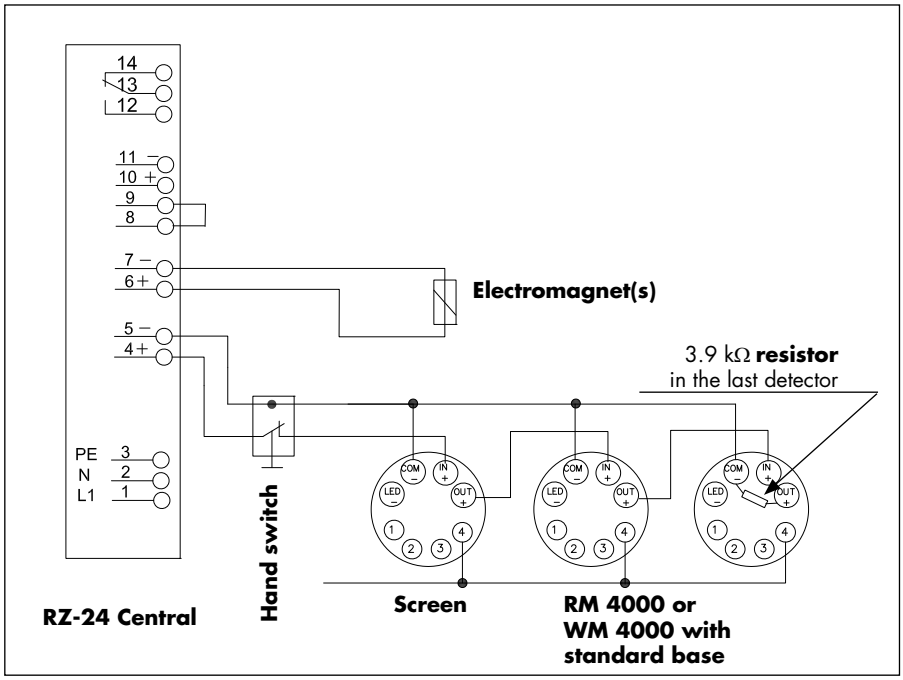
Electrical Connection, Status Indication

The number of the required lintel and ceiling detectors is determined by the effective directives in the respective country. In Germany it is based on the DIBt approval or the type approval. In European countries without national directives the EN 14637 serves for orientation.

The heat detectors (as the case may be also in combination with RM 4000 smoke detectors) are wired in line. In the last detector of the loop a 3.9 kΩ resistor has to be installed.

The **hand switch** (if the RZ-24 central is not installed in a position where the hand switch on its cover could be used) needs to be placed in the wiring to the first detector. This allows for a simple, linear wiring.

Wiring Diagram



Status Indication

An LED indicates the different operating status of the WM 4000 heat detector. Depending on the status it flashes in red or yellow.

LED red	LED yellow	Function
Flashes 1x/sec	No flash	After having applied power (or fitting the detector into the base): confirms the correct wiring. The StartUp feature lasts 4 minutes. During this **starting up phase** a fast functional test within 4 seconds is possible. During normal operation this lasts longer.
Permanently on	No flash	**Alarm**
No flash	No flash	**Normal operation**
No flash	Flashes every 4 seconds **after** StartUp	Sensor **no longer functions properly** => detector has to be replaced immediately

Testing Regulations, Accessories, Order Information

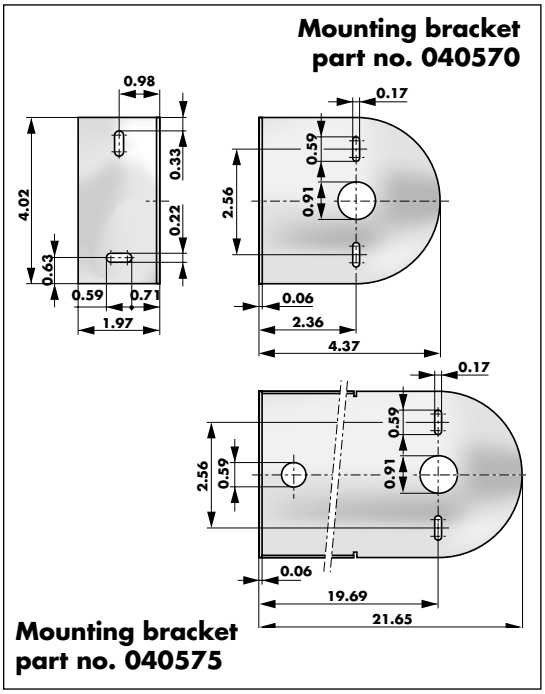
Attention: Every month or as the case may be every three months the ***correct functioning*** of a hold-open system ***must be tested*** - if the approval document doesn't specify another period or other national regulations exist - and once a year a ***maintenance service*** has to be carried out by a person trained for this purpose. See also the detailed information beginning on page 07.003.00.

IMPORTANT: After latest 8 years the WM 4000 heat detectors have to be replaced, even if they are still functioning without fault during the functional or maintenance tests. This ensures that the hold-open systems always are in full working condition and in the event of a fire will reliably trigger the closing of the doors.

Accessories
Mounting Brackets

For fixing the RM 4000 as a ***lintel detector*** on the wall, a short mounting bracket is available (part no. 040570).

According to the requirements of the DIBt and the EN 14637 for installing a fire detector, **in exceptional cases it is allowed to mount instead of a ceiling detector a detector on the wall** (see page 07.006.00):



If the distance between the upper edge of the wall opening and the ceiling is more than 16.4 ft, the ***ceiling detector*** may be fixed on the wall on a cantilever (part no. 040575) at least 11.48 ft above the upper edge of the wall opening. Due to the construction of this mounting bracket the distance between the wall and the centre of the detector is exactly 19.69 inch.

For the hole Ø 0.91" for the cable entry in the brackets DICTATOR supplies a membrane grommet (part no. 040577) as an option to additionally protect the supply cables to the fire detector. This membrane grommet should always be used for hold-open systems in hazardous areas.

Order Information

WM 4000 heat detector, A1R, with standard base (kit)	part no. 040861SET

Detector Accessories

Standard base	part no. 040862
3.9 kΩ resistor	part no. 040893
Bracket for fixing a lintel detector to the wall	part no. 040570
Bracket for fixing a ceiling detector to the wall, length 21.65"	part no. 040575
Membrane grommet black for cable entry in mounting brackets 040570 and 040575	part no. 040577

Other Accessories

RZ-24 central	page 07.009.00 et sqq.
Electromagnets with counter plates	page 07.039.00 et sqq.
Separate hand switch	page 07.077.00 et sq.

Replacement Fire Detectors for

DICTATOR Hold-Open Systems Installed Before 15 July 19

Hold-open systems that were installed on the basis of approvals no. Z-6.5-1903 and Z-6.5-1707 no longer have a valid approval as a basis, as these expired on 15.7.2019.

However, the old fire detectors may still be installed in existing systems for replacement purposes, provided they were produced before 15.7.2019. This means that the entire hold-open system does not necessarily have to be removed and a new currently approved hold-open system installed.

This also applies to DICTATOR hold-open systems in which smoke detectors RM 2000 and RM 3000+ as well as heat detectors WM 2000 and WM 3000+ are used and which were installed on the basis of the two above-mentioned approvals.

The smoke/heat detectors RM/WM 2000 are no longer available. Possible options for replacement can be found on the following page.

Components Concerned

Smoke detector RM 2000 with base
Heat detector WM 2000 with base
Smoke detector RM 3000+ with relay base
Heat detector WM 3000+ with relay base

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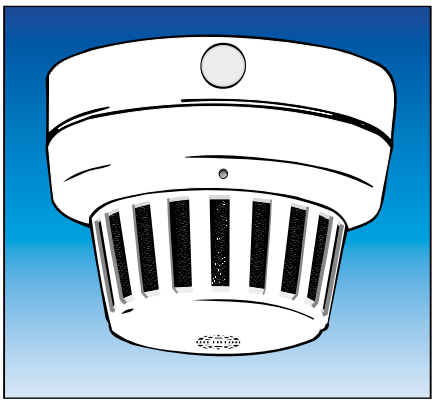


RM 2000 Smoke Detector / WM 2000 Heat Detector

The fire detectors (040500, 040502, 040511 and 040512) are included in the following approvals, among others: Z-6.5-1903, Z-6.5-1707. Unfortunately, the detectors are no longer available, even for replacement purposes, as they are no longer allowed to be manufactured due to regulations and stocks have been used up.

Replacement option 1: The complete hold-open system is replaced by the new hold-open system RZ-24 with smoke detector RM 4000. The hold-open device (magnet, door closer) can be retained under certain circumstances, provided it is included in the approval of the new hold-open system. The power supply unit of the previous hold-open system is omitted and replaced by the RZ-24 control unit. Any changes to the wiring that may be necessary must be checked on site.

Replacement option 2

Replacing the RM 2000 with an RM 3000+

The RM 3000+ is also included in the two approvals of the RM 2000 mentioned above. However, it must be checked again for each hold-open system whether the corresponding regulations in the respective country are still fulfilled when replacing the RM 2000 with an RM 3000+.

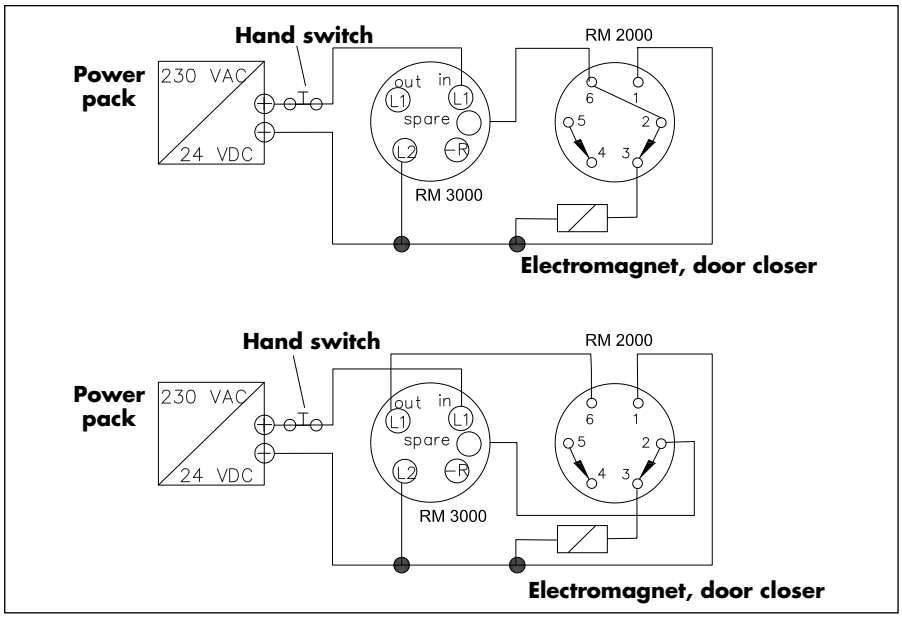
Major changes:

- The manual release button must be moved into the supply line of the smoke detectors, as the RM 3000+ does not reset automatically.
- Possible changes to the wiring or the use of the existing lines on site must be checked on the basis of the situation on site.

The RM 3000+ can be integrated into the existing detection loop.

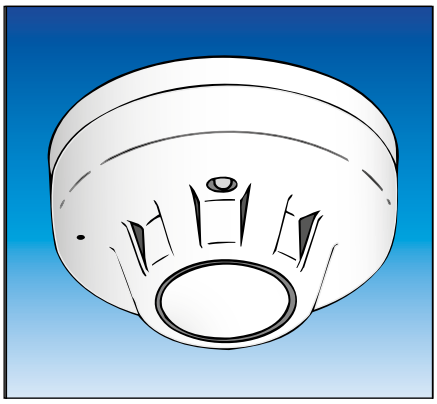
Please note the following connection options.

Wiring Examples



Technical Data

	RM 2000	WM 2000
Supply voltage	24 VDC (+15 %, -10 %)	
Power consumption	35 mA	about 15 mA
Response level of smoke unit, response level of thermal sensor	0.2 dB/m 149 °F	- -
Static alarm signal level	-	140 °F
Temperature class	-	A1R
Current-carrying capacity relay contacts	24 V/1.0 A	
IP rating	IP 42	

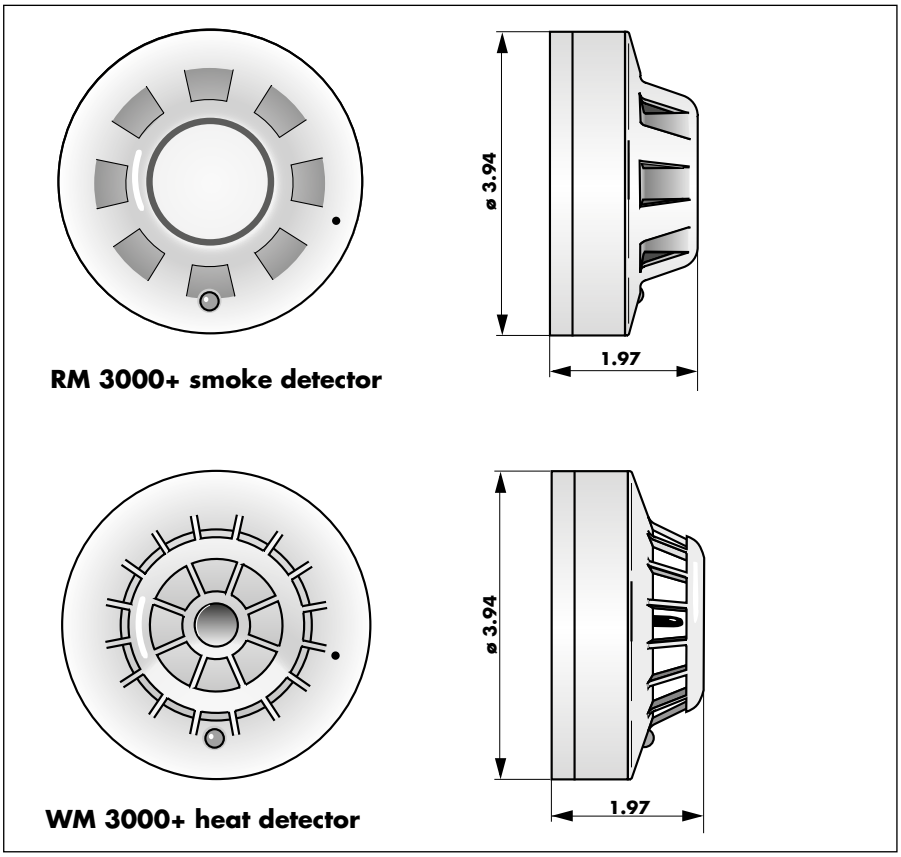


RM 3000+ Smoke Detector / WM 3000+ Heat Detector

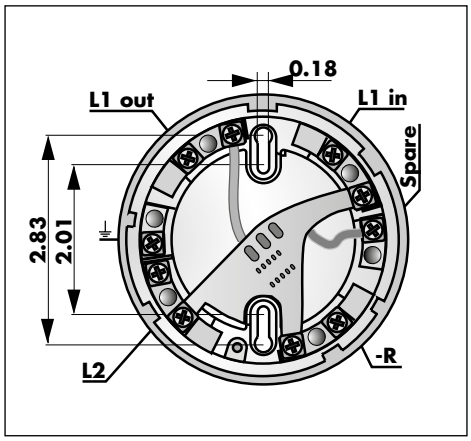
The relay contact of the smoke and heat detectors of the RM/WM 3000+ series is integrated in the base. Same as with the RM/WM 2000 series the base is the same for both types of detectors.

The heat detector has two heat sensors. In case of a fast increase and/or reaching the preset temperature, the relay contact interrupts the power supply of the connected hold-open device.

Dimensions



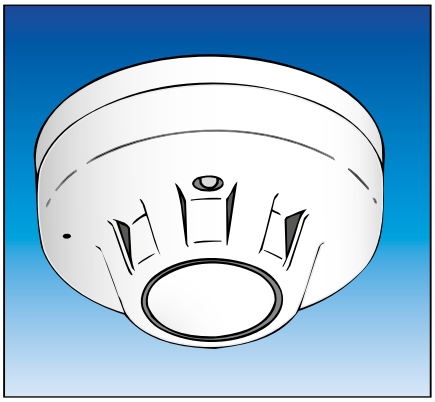
Relay Base RS 3000



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).

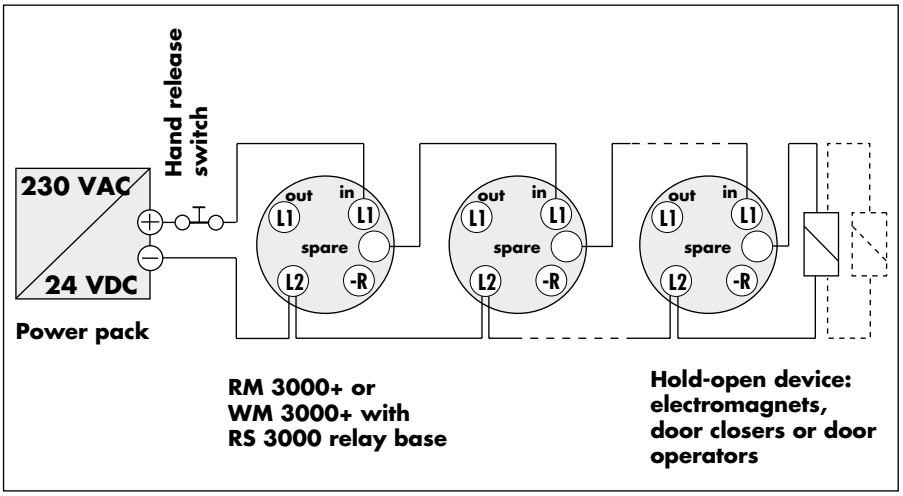
The detector is plugged in by turning it clockwise. An anti-theft feature is included, a missing detector means alarm.



Smoke/Heat Detectors RM/WM 3000+ - cont.

All installed smoke and heat detectors of the series RM/WM 2000 and RM/WM 3000+ **have to be replaced after 8 years**, even when they are still functioning correctly. This makes sure that the hold-open systems are always in full working condition and will reliably trigger the closing of the doors in the event of a fire.

Wiring Example



The power pack and the hand release switch always have to be connected to the first detector and the electromagnets always to the relay base of the last detector.

Technical Data

Supply voltage	9 to 33 VDC
Power consumption	25 mA at 24 VDC; 62 mA upon alarm
Operating temperature (smoke detector)	-4 °F to +140 °F (prevent icing!)
Response temperature (heat detector)	+140 °F
Current-carrying capacity relay 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 (smoke detector)

Order Information

RM 3000+ smoke detector	part no. 040800N
RM 3000+ smoke detector, with base	part no. 040800NSET
WM 3000+ heat detector, response level 140 °F	part no. 040820N
WM 3000+ heat detector, response level 140 °F, with base	part no. 040820NSET
Relay base for smoke and heat detectors RM/WM 3000+	part no. 040841

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. For the hold-open system exists a general type approval, no. Z-6.500-2443.

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	-4 °F to +104 °F
Ignition protection type fire detectors	Ex II 1G Ex ia II C T5 (at max. 104 °F) 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.

Whether an additional gas warning system is required must be checked by the EX representative of the operator.

Components

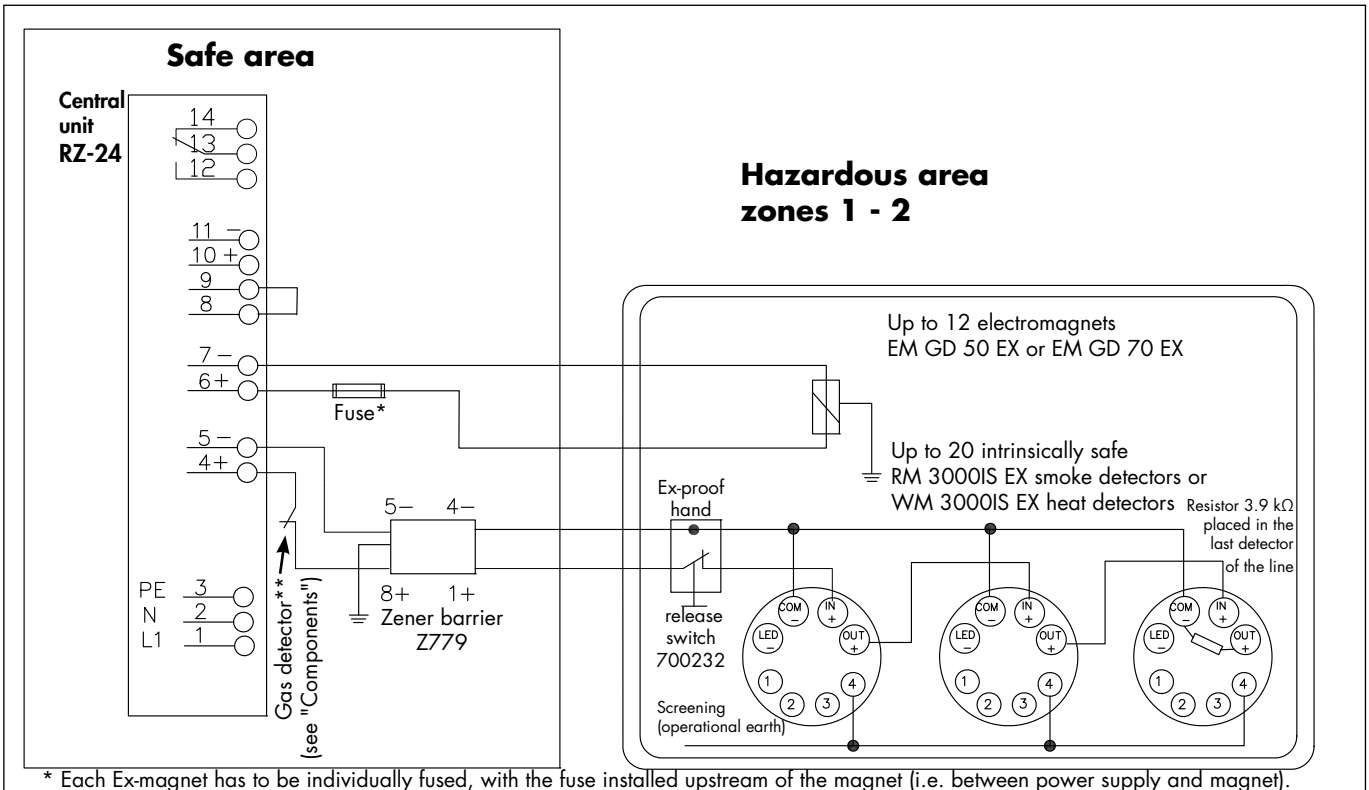
The explosion-proof DICTATOR hold-open system is made up of maximum 20 smoke or heat detectors and up to 12 explosion-proof magnets (ATTENTION: consider the maximum output load of the RZ-24 central!). The explosion-proof magnet is available in 2 different forces.

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 mm² (0.08 x 0.03 in²), max. length 109.4 yards.

- RZ-24 central unit with power supply: see page 07.009.00 et sqq.
- Shunt safety barrier: Zener barrier Z779
- RM 3000IS EX smoke detector (or WM 3000IS EX heat detector) with base
- Resistor 3.9 kΩ (included in the delivery of the RZ-24 central)
- Ex-proof magnet (for zones 1 + 2: p. 07.063.00 et sqq., only for zone 2: p. 07.061.00)
- Hand release switch (part no. 700232)
- Gas warning system**: Whether a gas warning system (to be provided by the customer) is required must be checked by the EX representative on the basis of the explosion protection documents (requires a potential-free contact with a switching capacity of 24 VDC/100 mA).

Wiring Diagram



* Each Ex-magnet has to be individually fused, with the fuse installed upstream of the magnet (i.e. between power supply and magnet). More information can be found in the manual of the magnets.

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

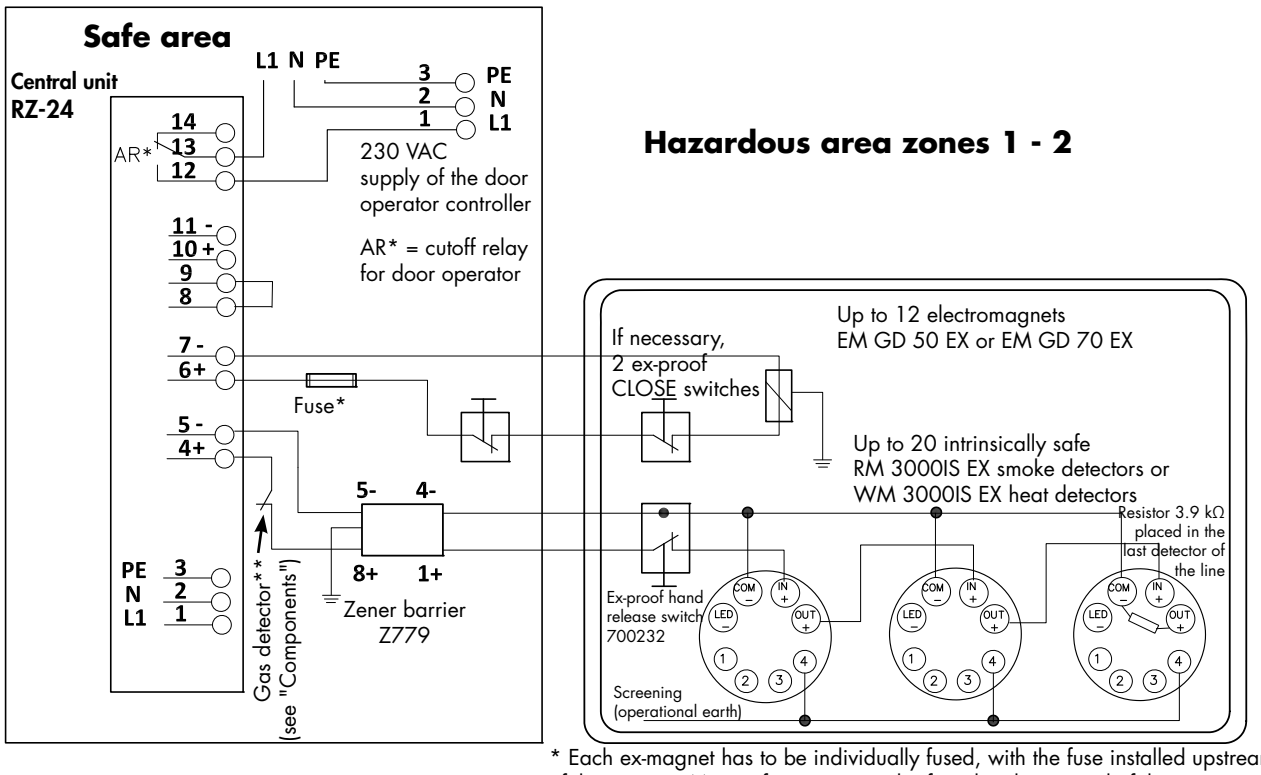
The door operator used to open the fire protection door is not shown in the list of the components. Which door drive should be chosen depends on the type of door, the required forces, functions etc.

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 mm² (0.08 x 0.03 in²), max. length 109.4 yards.

- RZ-24 central unit with power supply: see page 07.009.00 et sqq.
- Shunt safety barrier: Zener barrier Z779
- RM 3000IS EX smoke detector (or WM 3000IS EX heat detector) with base
- Resistor 3.9 kΩ (included in the delivery of the RZ-24 central)
- Ex-proof magnet (for zones 1 + 2: p. 07.063.00 et sqq., only for zone 2: p. 07.061.00)
- Hand release switch (part no. 700232)
- Gas warning system**: Whether a gas warning system (to be provided by the customer) is required must be checked by the EX representative on the basis of the explosion protection documents (requires a potential-free contact with a switching capacity of 24 VDC/100 mA).
- If necessary, ex-proof CLOSE switches for the door

Wiring Diagram



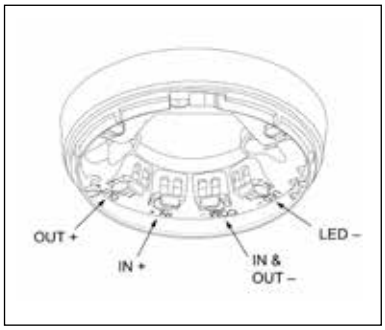
* Each ex-magnet has to be individually fused, with the fuse installed upstream of the magnet. More information can be found in the manual of the magnets.

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 3.94" height 2.36"
Hear detector WM 3000IS EX with base	Ø 3.94" height 1.97"



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.

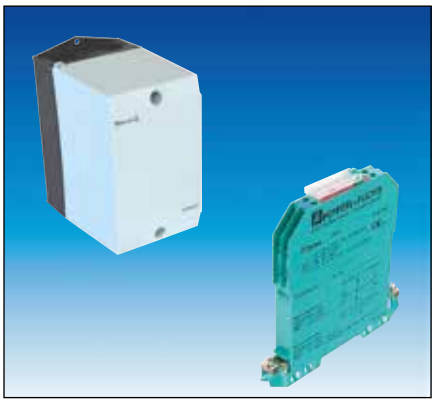
On demand an additional parallel display can be connected to the RM/WM 3000IS EX smoke/heat detectors to faster locate the triggered detector or the seat of fire in case of alarm.

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 °F to +140 °F (class T4) -40 °F to +104 °F (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 122 °F
Ignition protection type	Ex II 1G EEx ia IIC T5 (at max. 104 °F)
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 occcur 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 ATEX 7005).

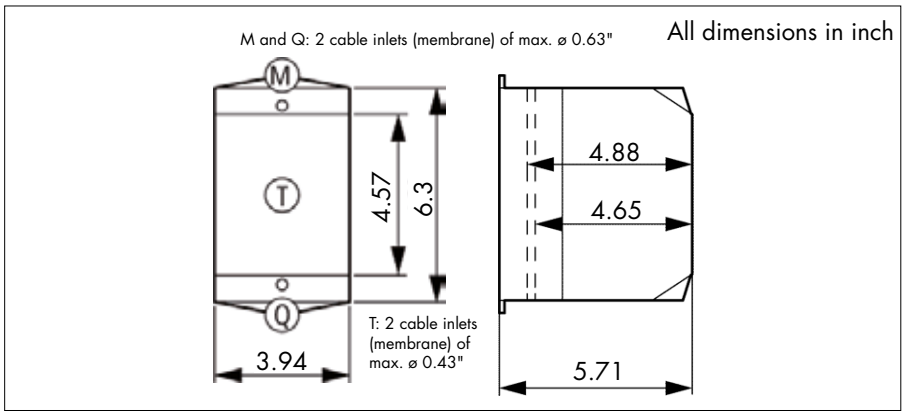
Functioning

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



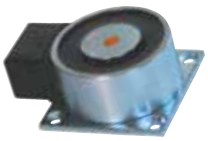
Technical Data

Characteristics Zener barrier Z779	2-channel, DC version, positive polarity
Supply voltage	max. 27 VDC
Fuse rating	50 mA
Series resistance	min. 301 Ω/max. 327 Ω
Number of connectable ex-proof detectors	max. 20 pieces of intrinsical safe detectors
IP rating	IP 20 / casing IP 65
Operating temperature	-4 °F to +140 °F
Dimensions Zener barrier	0.49 x 4.53 x 4.33 inch
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



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	15.75 lbf to 450 lbf
IP rating	from IP 20 to IP 66
Electrical connection	terminal, free leads etc.
Design	casing, distance tube, flush mounting etc.

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

Customized Designs

Apart from the variation possibilities described above, we also offer customized 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 about your application. We look forward to providing a solution.

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.

Technical Data

Electromagnet	EM GD 60	EM GD 60 S
Voltage	24 VDC ±10 %	24 VDC ±10 %
Power consumption	67 mA (1.6 W)	79 mA (1.9 W)
Duty cycle	100 %	100 %
Operating temperature	-4 °F to 140 °F	-4 °F to 140 °F
Force	157.5 lbf	225 lbf
Remanence / IP rating	0 lbf / IP 40	0 lbf / IP 40
Finish	zinc-plated / powder coated RAL 9010	

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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°.

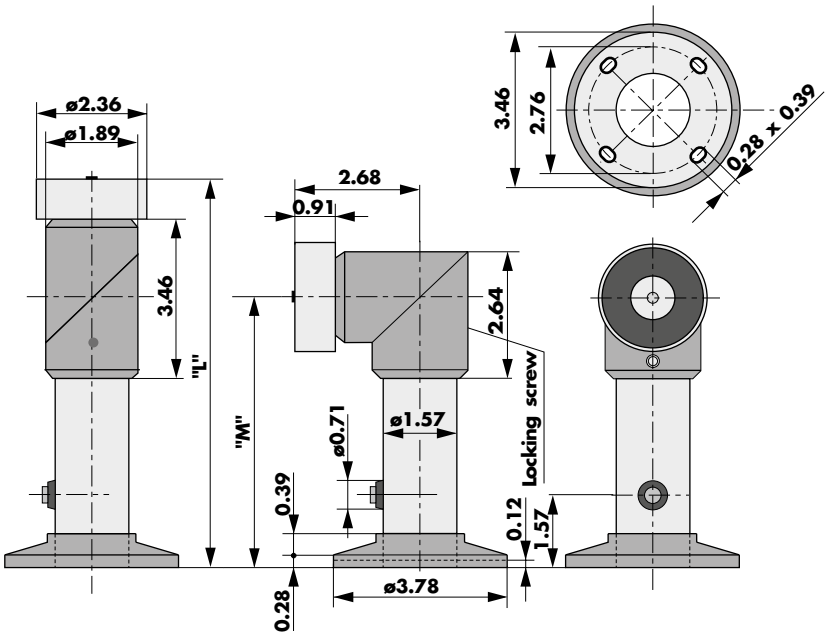
If you need to cut the distance tube, remove the head after loosening both grub screws which fix the head to the tube. Then pull out the wires connected to the interruption key.

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:
According to national and European regulations, the electromagnet on a fire or smoke protection door of a hold-open system must have a precisely defined push button must which must not be concealed by the open closure and meets the specifications regarding the mounting position. Push buttons integrated in the electromagnet generally don't meet these demands!
If required, please use our technical advisory service.

Dimensions



All dimensions in inch

Order Information

Model	Force	Length "L"	Height "M"	Part no.
GD 60 S 175	157.5 lbf	6.89 inch	4.21 inch	040111
GD 60 S 175 oT (ohne Taster = without interruptor key)	157.5 lbf	6.89 inch	4.21 inch	040264
GD 60 S 175 S	225 lbf	6.89 inch	4.21 inch	040164
GD 60 S 325	157.5 lbf	12.8 inch	10.12 inch	040112
GD 60 S 475	157.5 lbf	18.7 inch	16.02 inch	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.

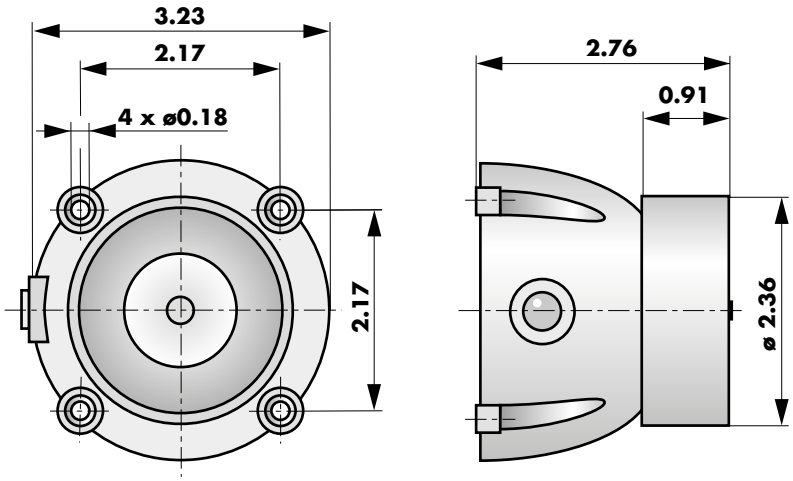
Fix the magnet to the wall and the anchor plate to the door. A selection of counter plates can be found later in this section.

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

Please note: According to national and European regulations, the electromagnet on a fire or smoke protection door of a hold-open system must have a precisely defined push button must which must not be concealed by the open closure and meets the specifications regarding the mounting position. Push buttons integrated in the electromagnet generally don't meet these demands!

Dimensions

All dimensions in inch



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

Order Information

EM GD 60 K 70 without interrupter key	force157.5 lbf	part no. 040224

Notes

Electromagnets with Connection Terminal

Models Q, R, RI, F

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

Electromagnets of the ranges Q, R, RI and F include magnets with diameters of 1.57, 1.97, 2.36 and 2.76 inch. 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.

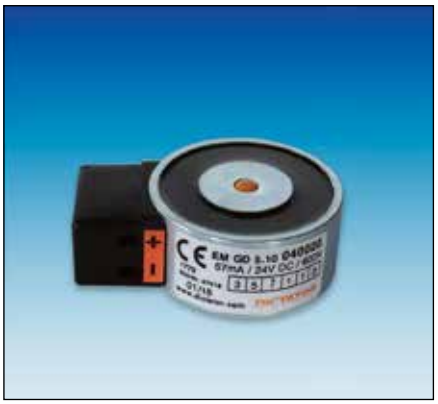
DICTATOR magnets are equipped with a spark extinction diode. In the event of faulty connection, the integrated polarity protection prevents the spark extinction diode being destroyed.

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 Q, R, RI and F series are **tested** according to EN 1155.

Technical Data

Voltage, standard configuration	24 VDC ± 10 %
Voltages, special configurations	24 VAC ± 10 % , 230 VAC, 230 VDC
Power consumption	67 mA to 142 mA
Duty cycle	100 %
Operating temperature	-4 °F to 140 °F
Holding force	67.5 lbf to 450 lbf
Remanence	0 lbf
Surface magnet, mounting plate	zinc-plated

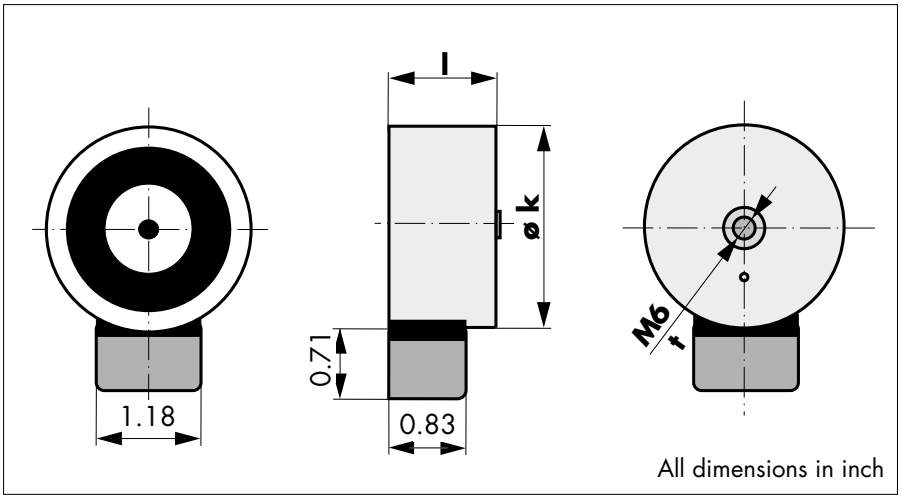


Electromagnets with Connection Terminal
Model Q

The electromagnets of the Q range are without base plate. They are fixed by means of a threaded hole in the back of the magnet.

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

Dimensions



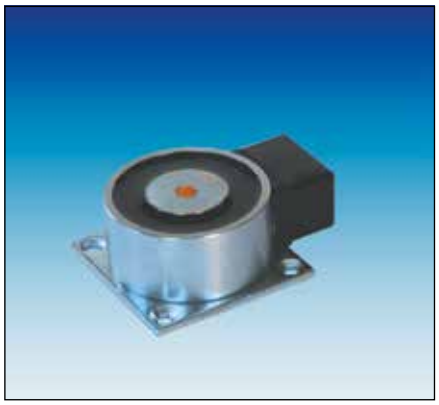
Type	k	l	t
EM GD 50 Q 23	ø 1.97	0.91	0.39
EM GD 70 Q 35	ø 2.76	1.38	0.59

Technical Data

Electromagnet EM	Voltage	Power consumption	Holding force
GD 50 Q 23	24 VDC ±10%	67 mA (= 1.6 W)	135 lbf
GD 70 Q 35	24 VDC ±10%	71 mA (= 1.7 W)	326.25 lbf

Order Information

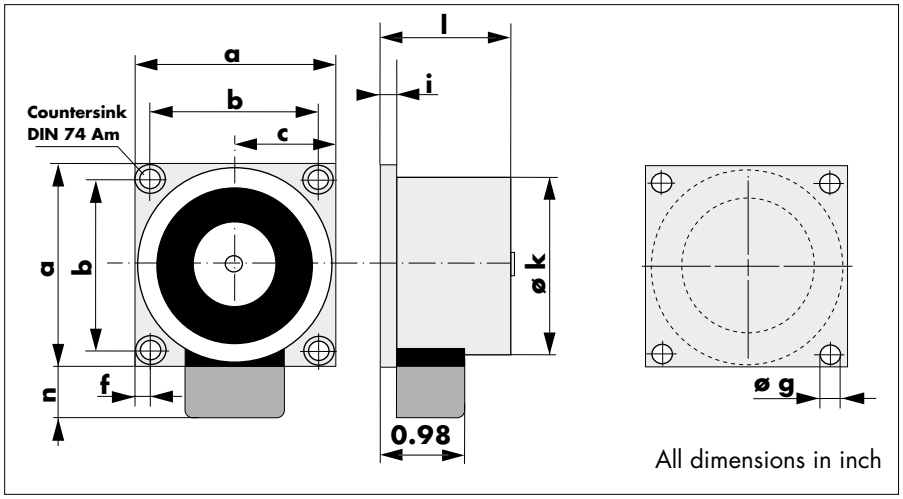
EM GD 50 Q 23 electromagnet	force	135 lbf	part no. 040020
EM GD 70 Q 35 electromagnet	force	326.25 lbf	part no. 040022



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	2.17	1.73	1.08	0.22	ø 0.18	0.12	ø 1.97	1.02	0.71
EM GD 60 R 26	2.56	2.17	1.28	0.2	ø 0.18	0.12	ø 2.36	1.02	0.71
EM GD 70 R 39	2.95	2.36	1.48	0.3	ø 0.22	0.16	ø 2.76	1.54	0.71

Technical Data

Electromagnet EM	Voltage	Power consumption	Holding force
GD 50 R 26	24 VDC ±10%	67 mA (= 1.6 W)	135 lbf
GD 60 R 26	24 VDC ±10%	67 mA (= 1.6 W)	157.5 lbf
GD 60 R 26 S	24 VDC ±10%	79 mA (= 1.9 W)	225 lbf
GD 70 R 39	24 VDC ±10%	71 mA (= 1.7 W)	326.25 lbf
GD 70 R 39 S	24 VDC ±10%	142 mA (= 3.4 W)	382.5 lbf
GD 70 R 39 R	24 VDC ±10%	142 mA (= 3.4 W)	450 lbf

Order Information

EM GD 50 R 26 electromagnet	force 135 lbf	part no. 040021
EM GD 60 R 26 electromagnet	force 157.5 lbf	part no. 040133
EM GD 60 R 26 S electromagnet	force 225 lbf	part no. 040134
EM GD 70 R 39 electromagnet	force 326.25 lbf	part no. 040023
EM GD 70 R 39 S electromagnet*	force 382.5 lbf	part no. 040117
EM GD 70 R 39 R electromagnet*	force 450 lbf	part no. 040118

* not tested according to EN 1155

Electromagnets with Connection Terminal

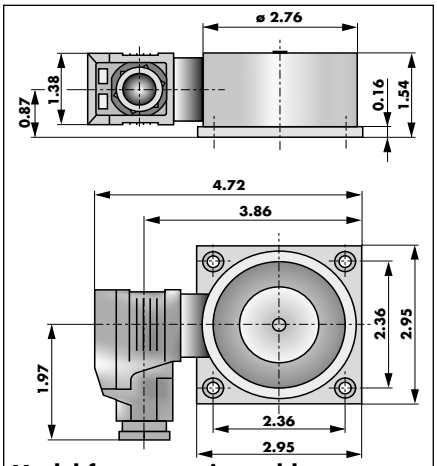
Model RI with Connection Terminal IP 65

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 silikone!**).

A special version of the EM GD 70 R39I magnet (part no. 040190) can also be used in hazardous zones 2 and 22 (see page 07.061.00).

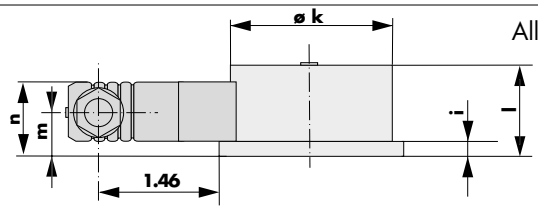
The electromagnets EM GD 50 and 60 are designed to be used with both 24 VDC and 24 VAC.

Dimensions

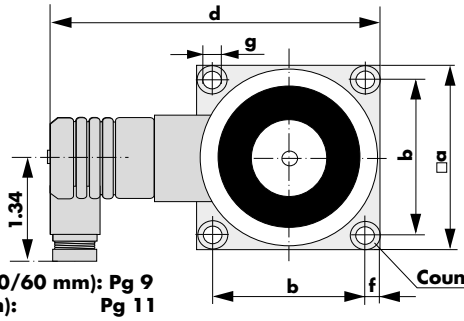


Model for connection cables up to ø 0.55 inch, e.g. on ships

All dimensions in inch



(ø 2.76"/70 mm : 1.26")



ø 1.97/2.36"(50/60 mm): Pg 9
ø 2.76" (70 mm): Pg 11

Countersink DIN 74 Am

Type	a	b	d	f	g	i	k	l	m	n
EM GD 50 R 26 I	2.17	1.73	3.94	0.22	Ø 0.18	0.12	Ø1.97	1.02	0.55	0.98
EM GD 60 R 26 I	2.56	2.17	4.33	0.2	Ø 0.18	0.12	Ø2.36	1.02	0.55	0.98
EM GD 70 R 39 I	2.95	2.36	4.65	0.3	Ø 0.22	0.16	Ø2.76	1.54	0.79	1.38

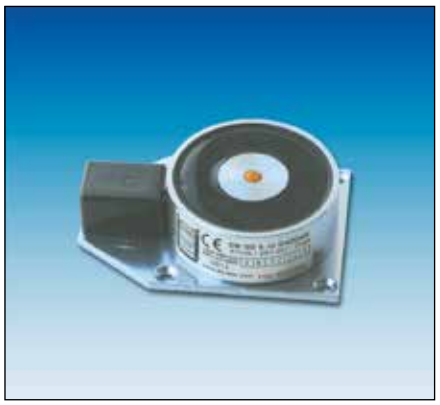
Technical Data

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	135 lbf	157.5 lbf	225 lbf	326.25 lbf

Order Information

EM GD 50 R 26 I, 24 VDC/AC	135 lbf	part no. 040107
EM GD 60 R 26 I, 24 VDC/AC	157.5 lbf	part no. 040131
EM GD 60 R 26 IS, 24 VDC/AC	225 lbf	part no. 040132
EM GD 60 R 26 IS, 24 VDC/AC **UV**	225 lbf	part no. 041014
EM GD 70 R 39 I, 24 VDC	326.5 lbf	part no. 040108
EM GD 70 R 39 I, 230 VDC*	326.5 lbf	part no. 040208
EM GD 70 R 39 I, 230 VAC*	326.5 lbf	part no. 040259
EM GD 70 R 39 I, PG 13.5, 24 VDC	326.5 lbf	part no. 040222

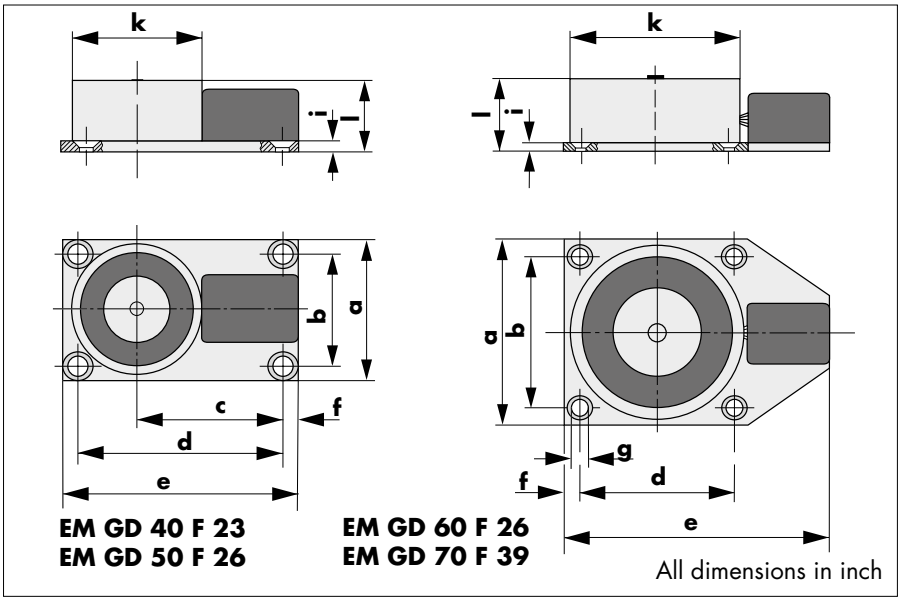
* not tested according to EN 1155



Electromagnets with Connection Terminal
Model F

Electromagnets of the range F include magnets with diameters of 1.57, 1.97, 2.36 and 2.76 inch (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	1.77	1.38	1.77	2.48	2.87	0.2	Ø 0.18	0.12	Ø 1.57	0.91
EM GD 50 F 26	2.17	1.73	2.01	2.91	3.27	0.18	Ø 0.18	0.12	Ø 1.97	1.02
EM GD 60 F 26	2.56	2.17	-	2.17	3.66	0.2	Ø 0.18	0.12	Ø 2.36	1.02
EM GD 70 F 39	2.95	2.36	-	2.36	4.06	0.3	Ø 0.22	0.16	Ø 2.76	1.54

Technical Data

EM GD	Power consumption	Force	EM GD	Power consumption	Force
40 F 23	75 mA (1.8 W)	67.5 lbf	**70 F 39**	71 mA (1.7 W)	326.25 lbf
50 F 26	67 mA (1.6 W)	135 lbf	**70 F 39 S**	142 mA (3.4 W)	382.5 lbf
60 F 26	67 mA (1.6 W)	157.5 lbf	**70 F 39 R**	142 mA (3.4 W)	450 lbf
60 F 26 S	79 mA (1.9 W)	225 lbf			

Order Information

EM GD 40 F 23 electromagnet*	force 67.5 lbf	part no. 040085
EM GD 50 F 26 electromagnet	force 135 lbf	part no. 040106
EM GD 60 F 26 electromagnet	force 157.5 lbf	part no. 040049
EM GD 60 F 26 S electromagnet	force 225 lbf	part no. 040163
EM GD 70 F 39 electromagnet	force 326.25 lbf	part no. 040037
EM GD 70 F 39 S electromagnet*	force 382.5 lbf	part no. 040115
EM GD 70 F 39 R electromagnet*	force 450 lbf	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.

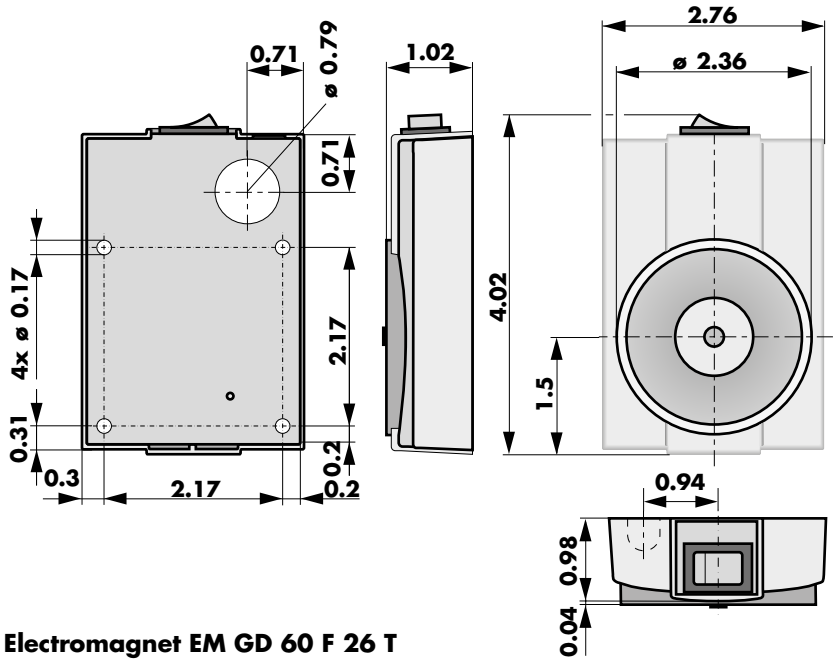
DICTATOR magnets are equipped with a spark extinction diode as standard. In the event of faulty connection, the integrated polarity protection prevents the spark extinction diode being destroyed.

The electromagnets have been **tested** according to EN 1155.

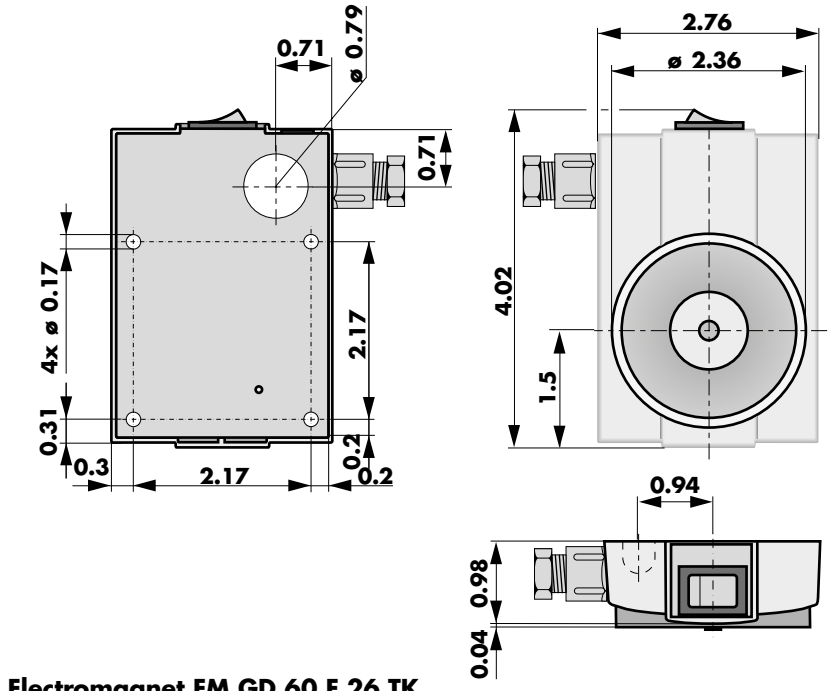
Technical Data

Voltage	24 VDC ±10 %
Power consumption	67 mA (1.6 W)
Duty cycle	100 %
Operating temperature	-4 °F to 140 °F
Force	157.5 lbf
Remanence	0 lbf
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

All dimensions in inch

Order Information

EM GD 60 F 26 T electromagnet	force 157.5 lbf	part no. 040097
EM GD 60 F 26 TK electromagnet	force 157.5 lbf	part no. 040045

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.

Technical Data

Voltage	24 VDC ± 15 %
Power consumption	67 mA (1.6 W)
Force	135 lbf
Duty cycle	100 %
Operating temperature	-4 °F to 140 °F
Remanence	0 lbf
Finish	body of the magnet zinc-plated
Front plate	white (plastic)

Installation

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

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

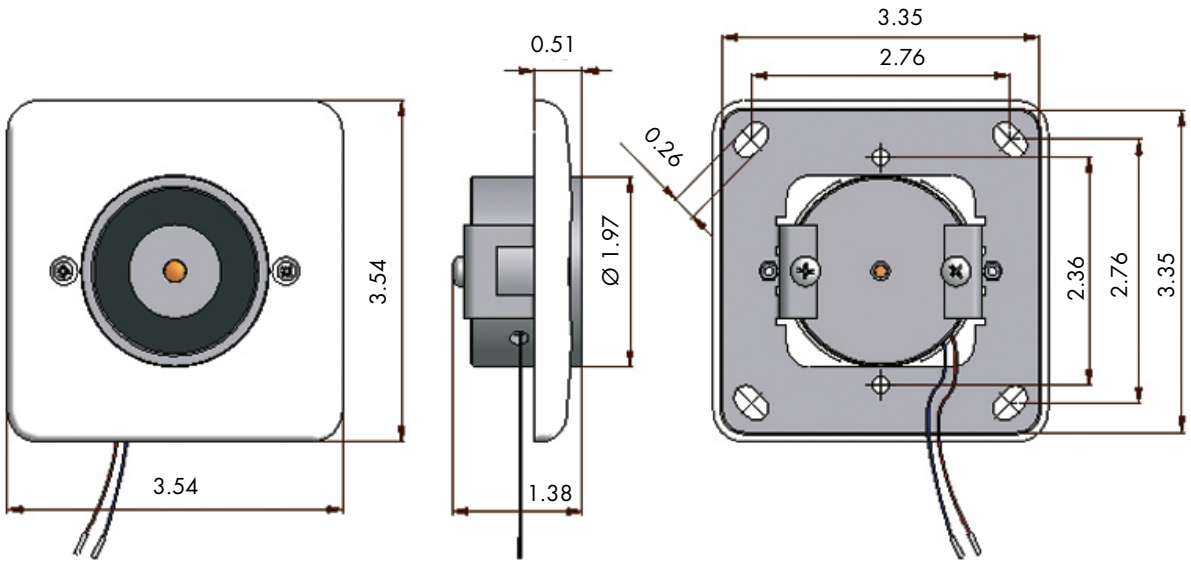
A selection of corresponding counter plates can be found later in this section.

Please note:
According to national and European regulations, the electromagnet on a fire or smoke protection door of a hold-open system must have a precisely defined push button must which must not be concealed by the open closure and meets the specifications regarding the mounting position. Push buttons integrated in the electromagnet generally don't meet these demands!
If required, please use our technical advisory service.

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 1.38 inch and a distance between the fixing holes of 2.36 inch (see drawing below)

Dimensions



All dimensions in inch

Order Information

EM GD 50 U 35 electromagnet	force 135 lbf	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.

Technical Data

Voltage	24 VDC
Power consumption	67mA (1,6 W)
Duty cycle	100 %
Operating temperature	-4 °F up to 140 °F
Force	157.5 lbf
Remanence	0 lbf
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.

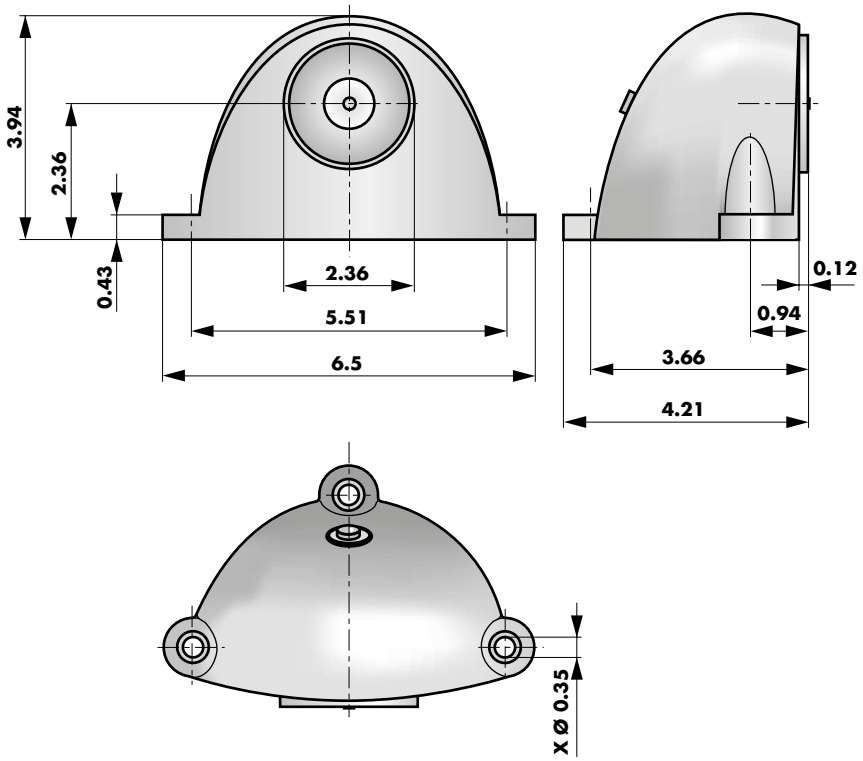
Connect the cable to the binders of the magnet and then fix the magnet with 3 screws to the floor.

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:
According to national and European regulations, the electromagnet on a fire or smoke protection door of a hold-open system must have a precisely defined push button must which must not be concealed by the open closure and meets the specifications regarding the mounting position. Push buttons integrated in the electromagnet generally don't meet these demands!
If required, please use our technical advisory service.

Dimensions

All dimensions in inch



Order Information

EM GD 60 FB electromagnet	force 157.5 lbf	part no. 040370
EM GD 60 FB oT without interruptor key	force 157.5 lbf	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.

Technical Data

EM GD Electromagnet	Model RM	Model ST
Voltage	24 VDC ±15 %	
Power consumption ±10 %	see information on the following pages	
Force	135 lbf - 326.25 lbf	
Duty cycle / Remanence	100 % / 0N	
Operating temperature	-4 °F to 140 °F	
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

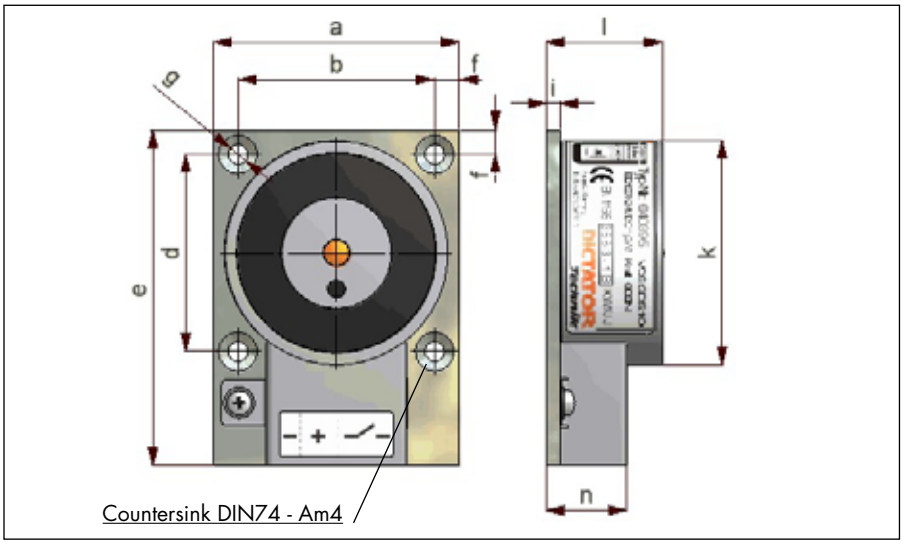
Model RM

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	2.17	1.73	1.73	2.95	0.22	Ø0.18	0.12	Ø1.97	1.02	0.71
EM GD 60 F26 RM	2.56	2.17	2.17	3.35	0.2	Ø0.18	0.12	Ø2.36	1.02	0.71
EM GD 70 F39 RM	2.95	2.36	2.36	3.74	0.3	Ø0.22	0.16	Ø2.76	1.54	0.75

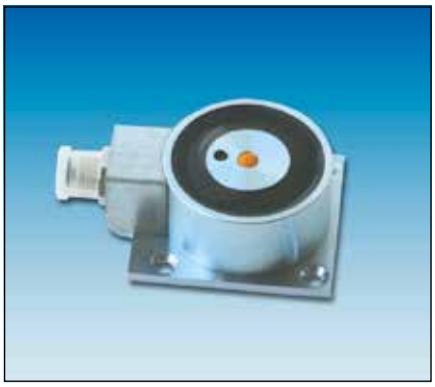
All dimensions in inch

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	135 lbf	157.5 lbf	326.25 lbf
Duty cycle		100 %	
Operating temperature		-4 °F to 140 °F	
Remanence		0 lbf	
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 135 lbf	part no. 040395
EM GD 60 F26 RM Electromagnet	force 157.5 lbf	part no. 040396
EM GD 70 F39 RM Electromagnet	force 326.25 lbf	part no. 040397



Electromagnet with Feedback Contact

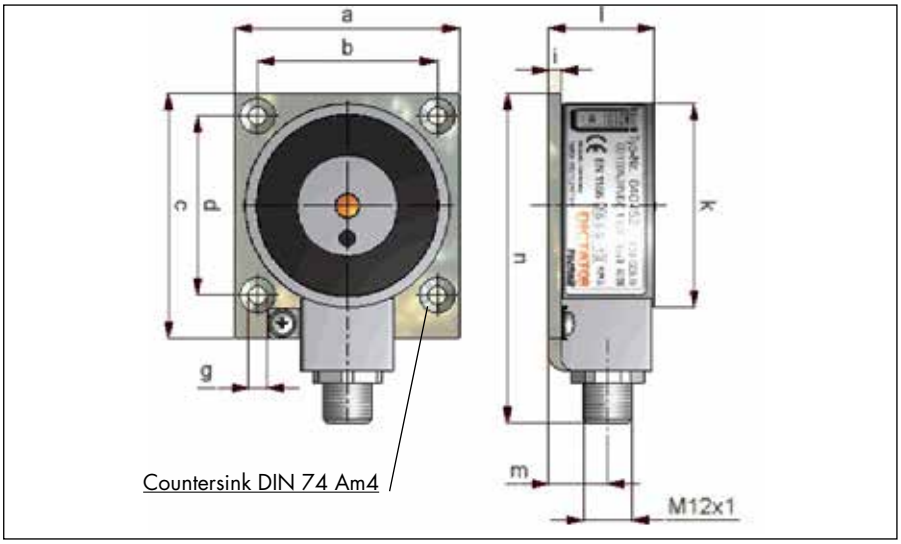
Model ST

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	2.17	1,73	2.36	1.73	Ø0.18	0.12	Ø1.97	1.02	0.57	3.19
EM GD 70 F39 ST	2.95	2.36	3.15	2.36	Ø0.22	0.16	Ø2.76	1.54	0.77	4.02

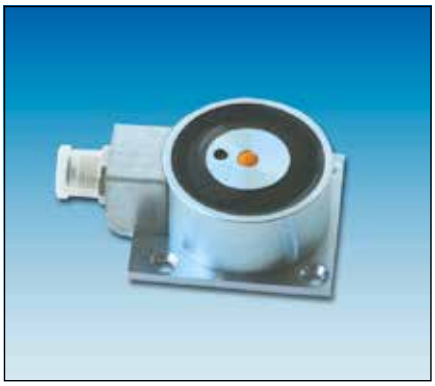
All dimensions in inch

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	135 lbf	326.25 lbf
Duty cycle	100 %	
Operating temperature	-4 °F to 104 °F	
Remanence	0 lbf	
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 135 lbf	part no. 040152
EM GD 70 F39 ST Electromagnet	force 326.25 lbf	part no. 040153
Circular connector M12x1with 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.

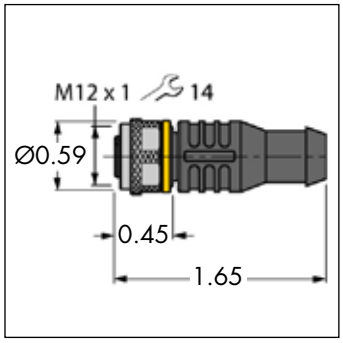
Please note: According to national and European regulations, the electromagnet on a fire or smoke protection door of a hold-open system must have a precisely defined push button must which must not be concealed by the open closure and meets the specifications regarding the mounting position. Push buttons integrated in the electromagnet generally don't meet these demands!

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	32.81 ft
Coupler	straight
	with swivel nut

Pin Assignment Model ST

Pin Assignment

Magnet

Circular connector

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

Ex-Proof Electromagnet

for the Exclusive Use in Hazardous Zones 2 and 22

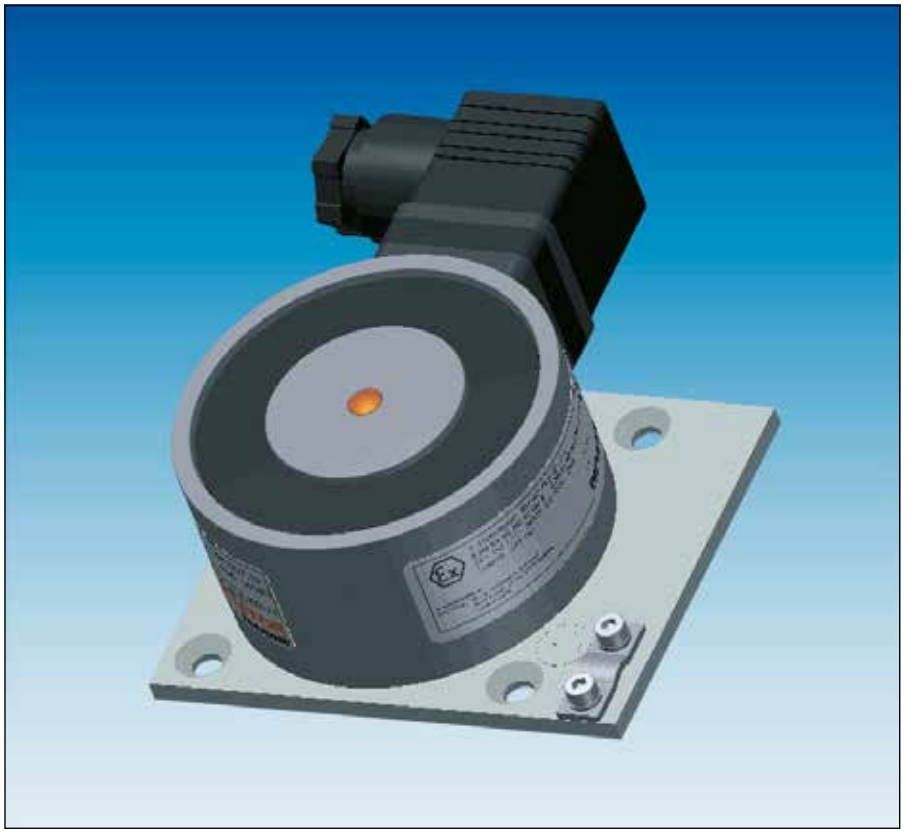
Hazardous areas are divided into different zones. As zones 2 (gas) or 22 (dust) are defined areas where during normal operation no dangerously hazardous atmosphere occurs or when only during a short period. The demands on devices used in these zones are minor to those applying to the ex-proof DICTATOR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

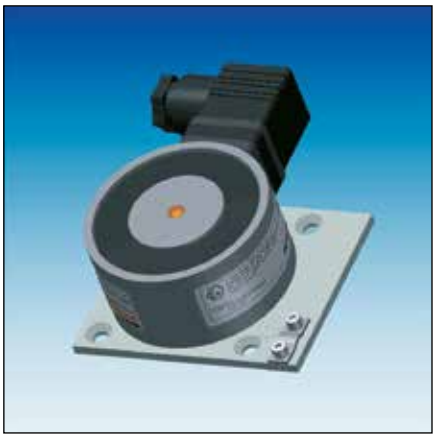
By default the EM GD 70 R39I Ex2 is equipped with diodes to suppress the induced current on opening (spark extinction diodes) and polarity protection.

The electromagnet has been tested according to EN 1155.



Technical Data

Electromagnet	**EM GD 70 R39I Ex2**
Voltage	24 VDC ±15 %
Power consumption (±15 %)	71 mA (1.7 W)
Force / Remanence	326.25 lbf / 0 lbf
Ignition protection type	Ex II 3G Ex nC IIC T6 Gc X
	Ex II 3D Ex nC IIIC T85°C Dc X
Protection / Duty cycle	IP 65 / 100 %
Operating temperature	-4 to +140 °F
Connection	connector box GDML 2011 GE 1 G, PG 11
Finish	magnet and base plate zinc-plated



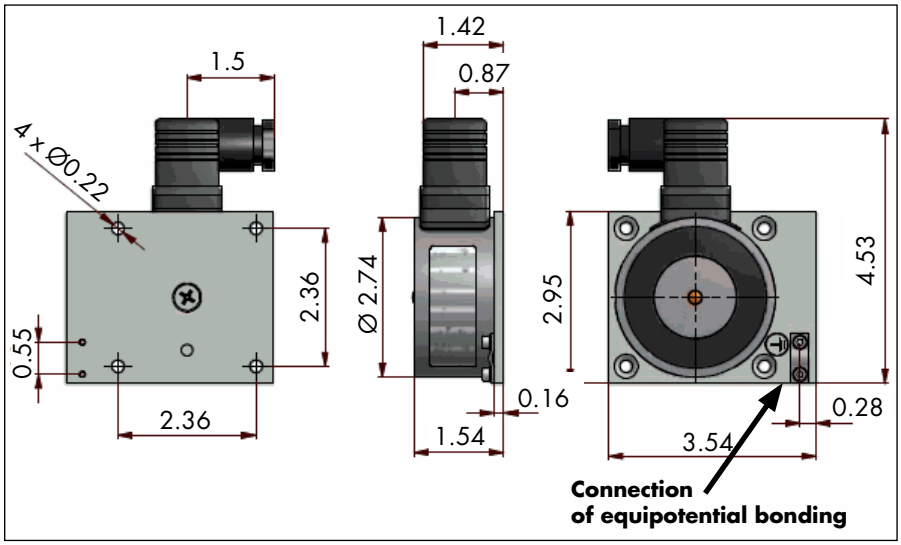
Dimensions, Application, Accessories

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

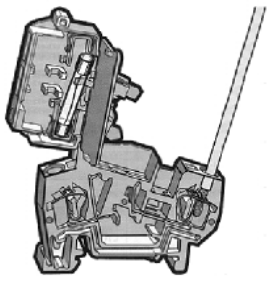


Electrical Connection

Connection polarity on the plug:

Screw terminal 1	(+)
Screw terminal 2	(–)

Fuse, Fuse Carrier



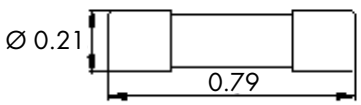
Fuse carrier with pivoting retaining bracket

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 solding directly into the feeding line, with bayonet catch
  Dimensions of the fuse carrier: L = 1.7 inch, ⌀ = 0.56 inch
  Suitable for cables with a cross section of up to max. 0.16 inch.
- Fuse carrier for mounting on top hat rails, with pivoting retaining bracket

Fuse carrier with bayonet catch



Fuse 5x20, semi-timelag

Order Information

EM GD 70 R39 I Ex2 electromagnet (zones 2 and 22), 326.5 lbf	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 authorized 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** IBExU14ATEX1211X/PTB 03 ATEX 2174 X and the confirmation of the conformity to building class PTB 03 ATEX N060-5 at the PTB Institute, Braunschweig/Germany.

Technical Data

Electromagnet	EM GD 50 Ex .. m	EM GD 70 Ex .. m
Voltage ±15 %	24 VDC	24 VDC
Max. permitted ripple	20 %	20 %
Power consumption (±15 %)	67 mA (1.6 W)	70 mA (1.7 W)
Force / Remanence	135 lbf / 0 lbf	326,25 lbf / 0 lbf
Protection / Duty cycle	IP 66 / 100 %	IP 66 / 100 %
Operating temperature	-4° to 104 °F	-4° to 104 °F
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	

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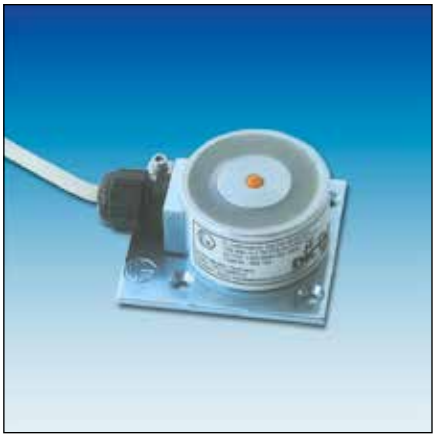


Explosion-Proof Electromagnet with Connection Cable

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 6.56 ft 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

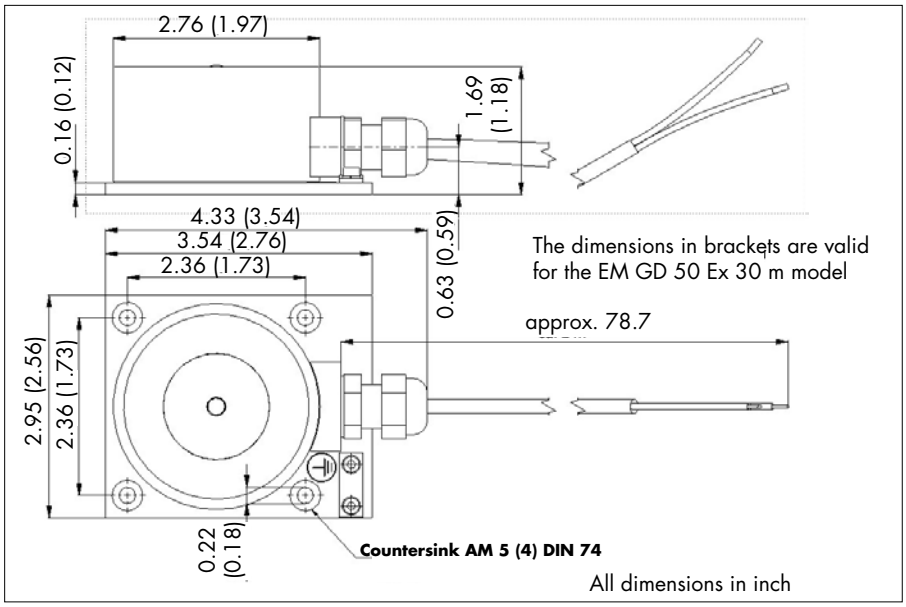
The DICTATOR explosion-proof magnet is fixed to the wall behind the door that needs to be kept open. The connection cable must be securely embedded and sufficiently protected from mechanical damage (e.g. by using a cable channel).

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 central RZ-24 (see page 07.009.00). However each magnet must be protected by a fuse (G 200 mA type semi-timelag) of max. 3 x I_B according to IEC 60127-2-1 (connected in series), which corresponds to its rated current. On the mounting plate of the magnet a terminal is provided to connect the equipotential bonding conductor of a minimum cross section of 0.16 in² 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/6.56 ft (standard)*	part no. 040154
EM GD 70 Ex 43 m	cable 2 m/6.56 ft (standard)*	part no. 040156

* Length of cable: standard 6.56 ft, optionally 5/16.4, 10/32.81 or 15/49.21 m/ft
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 0.2 to 0.39 inch and a maximum wire cross section of 0.1 square inch. The EM GD...Ex...em electromagnet has "Encapsulation (m)" protection and the terminal box has "Increased safety (e)" protection.

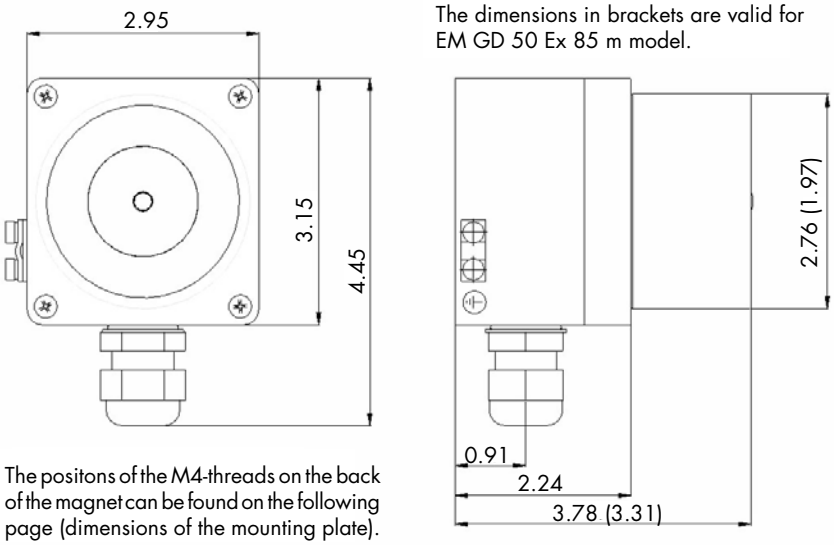
Installation

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 central RZ-24 (see page 07.009.00). However each magnet must be protected by a fuse (G 200 mA type semi-timelag) of max. 3 x I_B according to IEC 60127-2-1 (connected in series), which corresponds to its rated current. On the outside of the terminal box a terminal is provided to connect the equi-potential bonding conductor of a minimum cross section of 0.16 in^2 to assure the equipotential bonding.

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

Dimensions



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

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

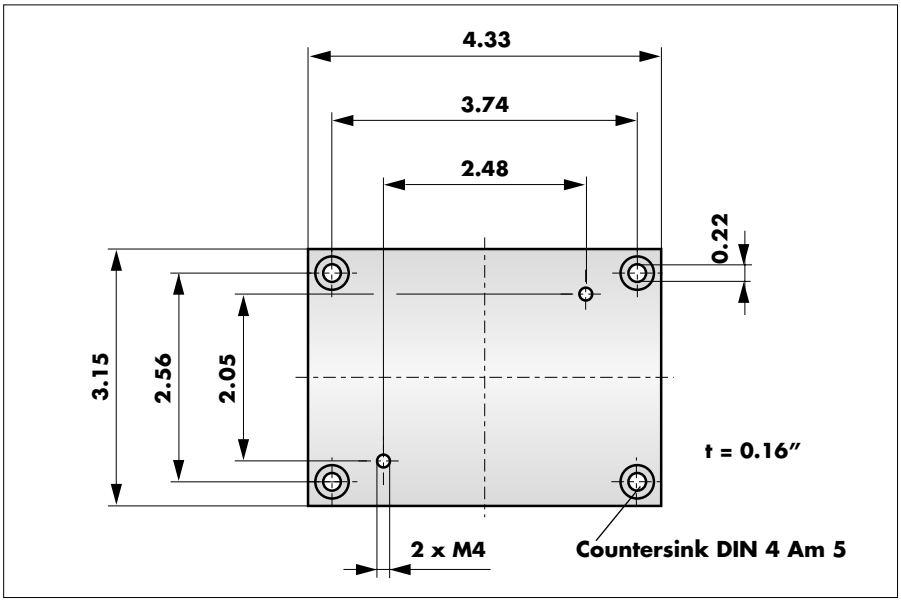
The magnet is screwed to the mounting plate and fixed to the wall with 4 screws.

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

Mounting Plate

The DICTATOR mounting plate is screwed to the wall behind the door that has to be kept open by the magnet with 4 ⌀ 0.2" flat head screws. The magnet is then fixed to the mounting plate with two M4-screws.

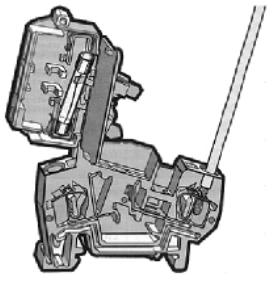
Dimensions



Fuse, Fuse Carrier

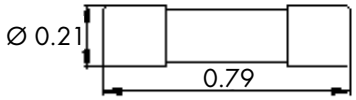
The fuse is placed with the fuse carrier directly into the feeding line to the ex-proof magnet. There are available two different types of fuse carriers.

- Fuse carrier for solding directly into the feeding line, with bayonet catch
  Dimensions of the fuse carrier: L = 1.7 inch, ⌀ = 0.56 inch
  Suitable for cables with a cross section of up to max. 0.16 inch.
- Fuse carrier for mounting on top hat rails, with pivoting retaining bracket



Fuse carrier with pivoting retaining bracket

Fuse carrier with bayonet catch



Fuse 5x20, semi-timelag

Order Information

Mounting plate for explosion-proof magnets	part no. 205252
Fuse 5 x 20 mm/0.2x0.79", semi-timelag, 200 mA	part no. 040586
Fuse carrier with bayonet catch	part no. 040587
Fuse carrier with pivoting retaining bracket	part no. 040588

Bar Magnet

High Holding Force - Small Size

The DICTATOR EM FH bar magnet 100x24x27 mm/3.94x0.94x1.06 inch is the perfect solution when a normal (round) electromagnet with a comparable holding force does not fit. With a width of only 0.94 inch the **narrow** bar magnet can also be placed unobtrusively in applications with **restricted space** (e.g. in smoke vents in the window frame). Its 90 lbf holding force is very high and corresponds to that of a round electromagnet with a diameter of at least 1.57 inch.

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 0.9 lbf.

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

Technical Data

Voltage	24 VDC ± 10 %
Power consumption	88 mA (2.1 W)
Force	90 lbf
Duty cycle	100 %
Operating temperature	-4 °F to +104 °F
Remanence	0.9 lbf
Finish	zinc-plated
IP rating	IP 20 (DIN 400 50)

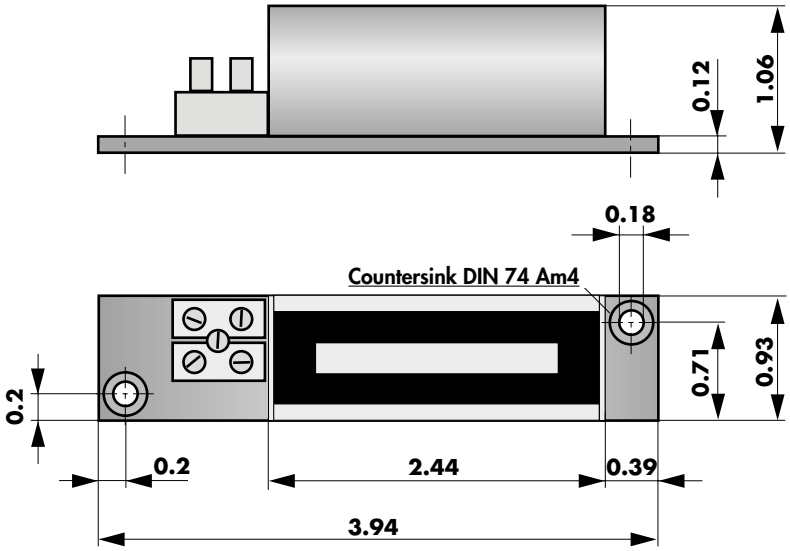
Installation

When using the bar magnet on windows it is fixed with 2 M4 screws in a recess of the frame. The AP FH 70x30x5 mm/2.76x1.18x0.2 inch counter plate is mounted on the window as a counterpart to the magnet. Make sure that the counter plate completely covers the bar magnet and lies straight.

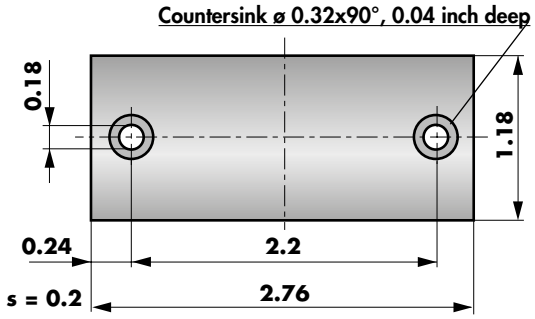
A two-channel terminal is provided on the mounting plate for the electrical connection to the 24 VDC power supply.

Dimensions

EM FH 100x24x27 mm/3.94x0.94x1.06 inch bar magnet



AP FH 70x30x5 mm/2.76x1.18x0.2 inch counter plate



Order Information

EM FH 100x24x27 bar magnet	force 90 lbf	part no. 040273
AP FH 70x30x5 counter plate		part no. 040291

Flexible Counter Plate

With Elastic Joint (Model G)

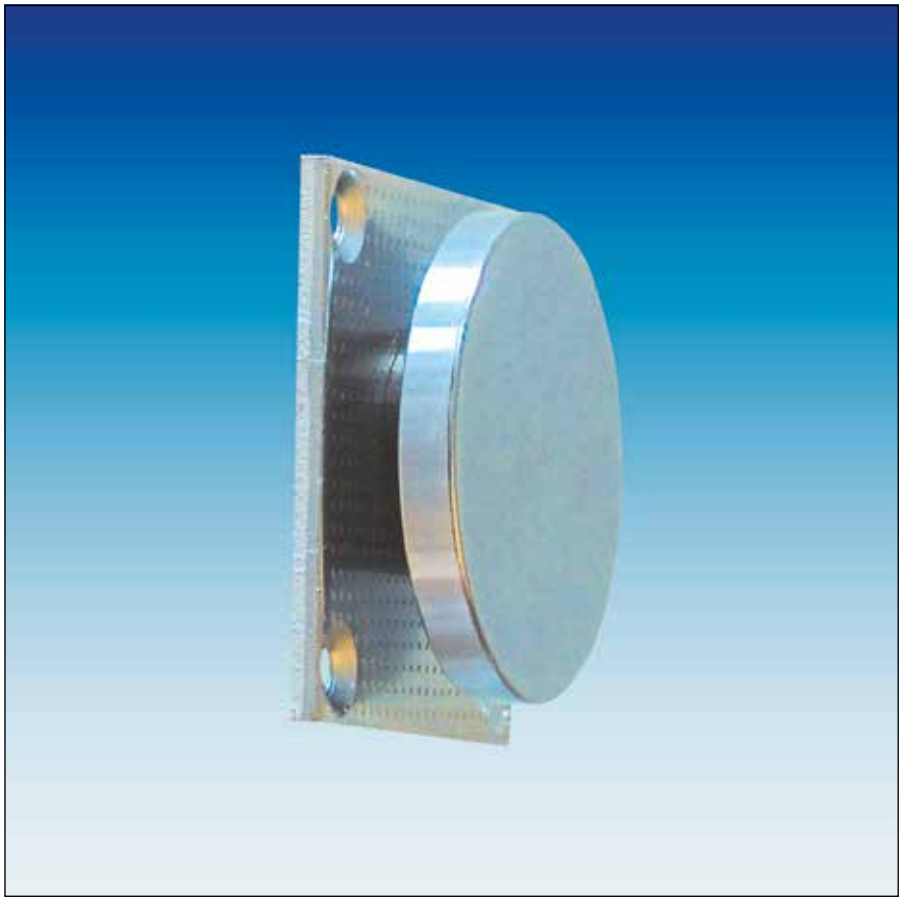
DICTATOR counter plates provide the safe and reliable connection between door and electromagnet.

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 mm/1.73"	part no. 040089
AP GD 50 G 16 counter plate	Ø 54 mm/2.13"	part no. 040025
AP GD 60 G 16 counter plate	Ø 64 mm/2.52"	part no. 040039
AP GD 60 G 30 counter plate	Ø 64 mm/2.52"	part no. 040096
AP GD 60 G 60 counter plate	Ø 64 mm/2.52"	part no. 040084
AP GD 70 G 20 counter plate	Ø 74 mm/2.91"	part no. 040026

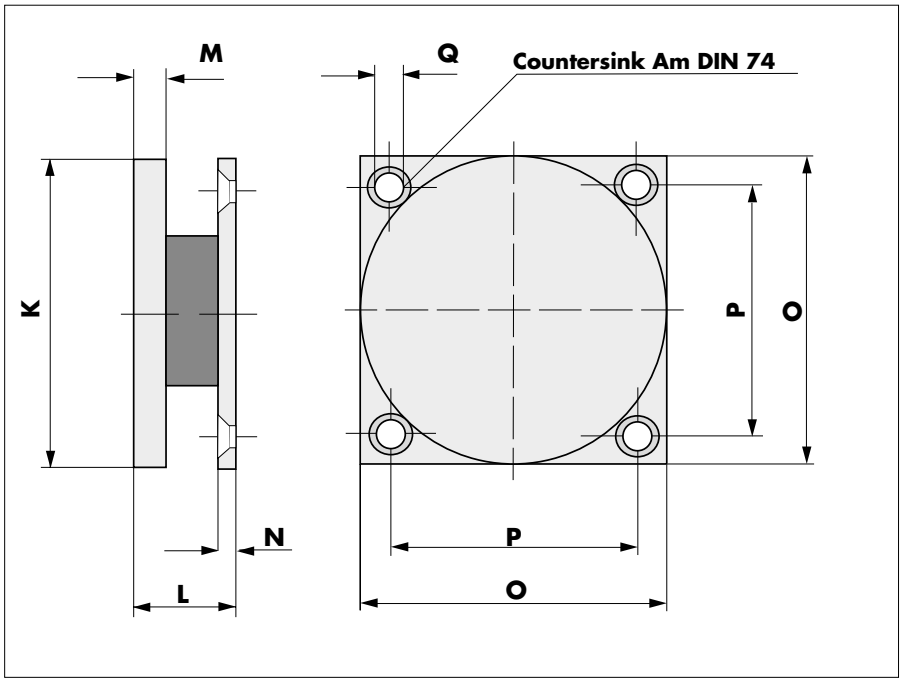
Installation

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 1.73	0.55	0.22	0.12	1.97	1.57	Ø 0.18
AP GD 50 G 16	Ø 2.13	0.63	0.28	0.12	2.17	1.73	Ø 0.18
AP GD 60 G 16	Ø 2.52	0.63	0.28	0.12	2.56	2.17	Ø 0.18
AP GD 60 G 30	Ø 2.52	1.18	0.28	0.12	2.56	2.17	Ø 0.18
AP GD 60 G 60	Ø 2.52	2.36	0.28	0.12	2.56	2.17	Ø 0.18
AP GD 70 G 20	Ø 2.91	0.79	0.39	0.16	2.95	2.36	Ø 0.22

All dimensions in inch

Counter Plate

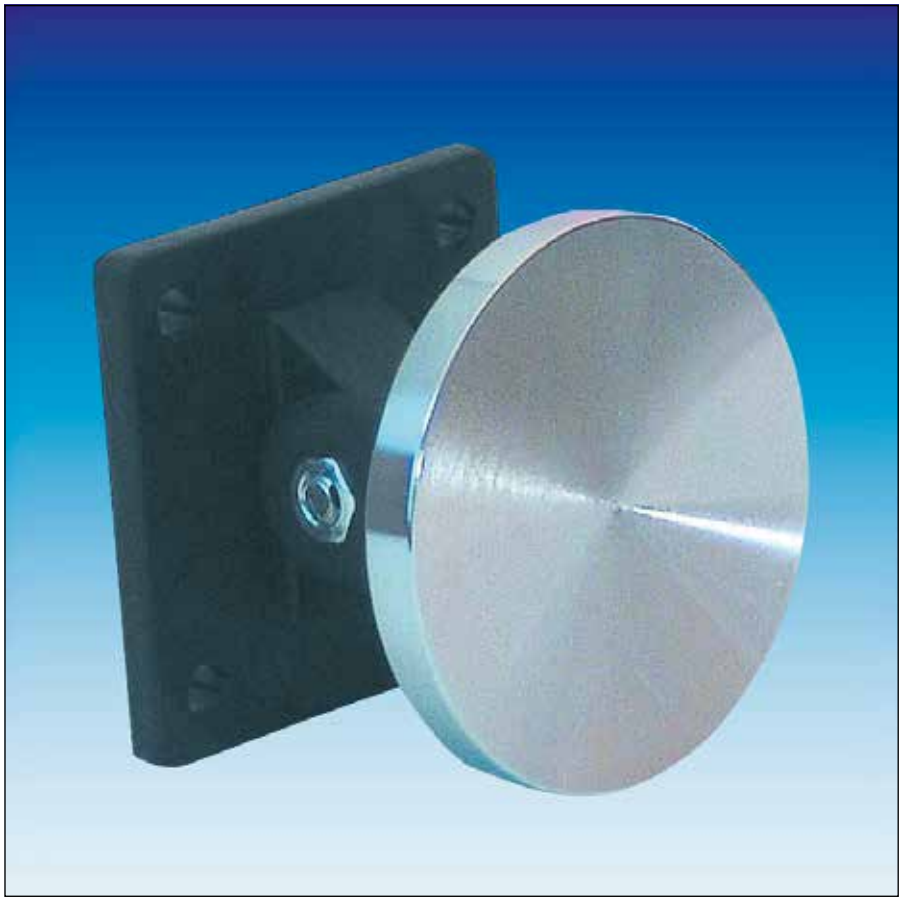
With Angular Joint

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 mm/1.73"	part no. 040072
AP GD 50 W 50 counter plate	Ø 54 mm/2.13"	part no. 040027
AP GD 60 W 50 counter plate	Ø 64 mm/2.52"	part no. 040070
AP GD 70 W 54 counter plate	Ø 74 mm/2.91"	part no. 040068

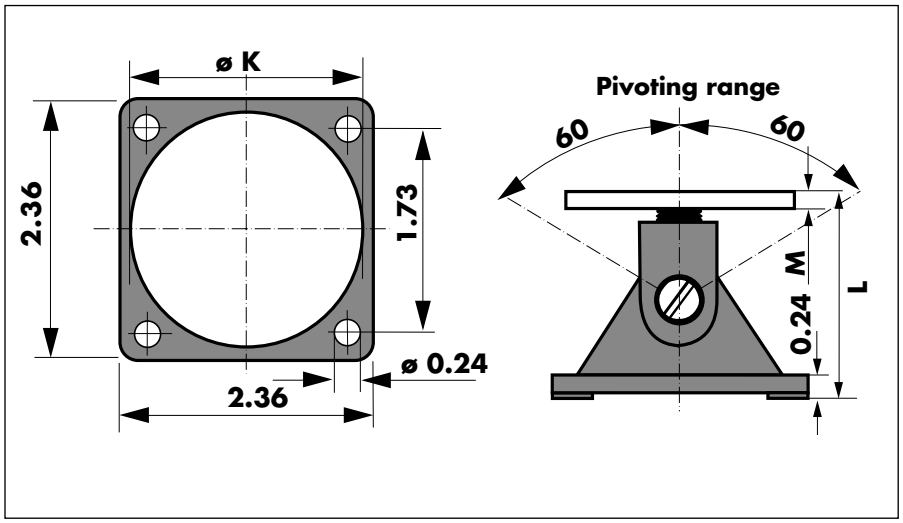
Installation

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 1.73	1.97	0.22
Counter plate AP GD 50 W 50	Ø 2.13	2.01	0.28
Counter plate AP GD 60 W 50	Ø 2.52	2.01	0.28
Counter plate AP GD 70 W 54	Ø 2.91	2.13	0.39

All dimensions in inch

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 22.5 lbf on a stroke of 0.79 inch.

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 electro-magnets.

Technical Data

Material of the casing	PA 66, glass-fiber reeinforced
Colour of the casing	anthracite
Armature plate	zinc-plated steel
Damping force	22.5 lbf on a stroke of 0.79 inch

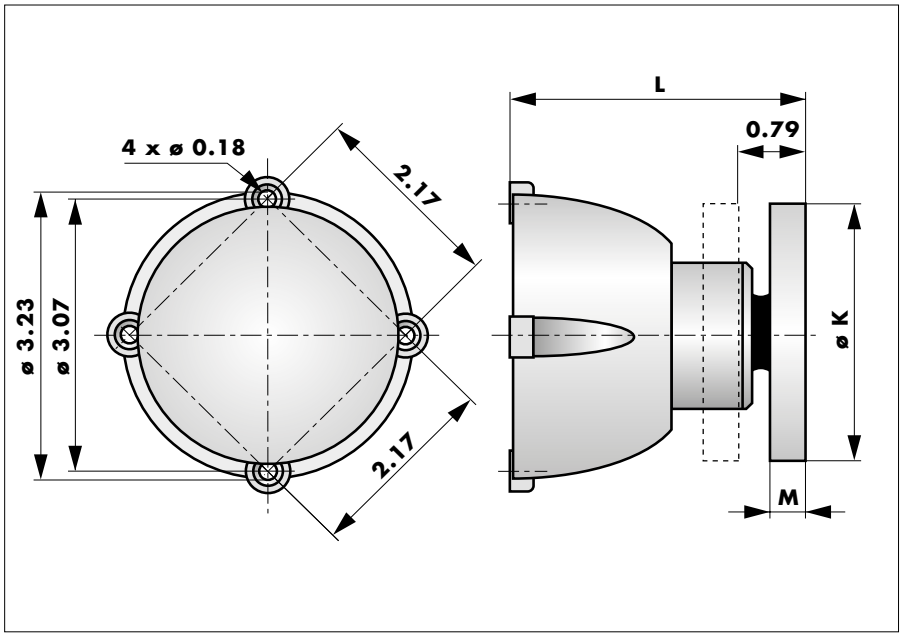
Installation

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 2.13	3.15	0.28
AP GD 60 T 80	Ø 2.52	3.15	0.28
AP GD 70 T 84	Ø 2.91	3.31	0.39

All dimensions in inch

Order Information

AP GD 50 T 80 counter plate	Ø 54 mm/2.13"	part no. 040071
AP GD 60 T 80 counter plate	Ø 64 mm/2.52"	part no. 040028
AP GD 70 T 84 counter plate	Ø 74 mm/2.91"	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:

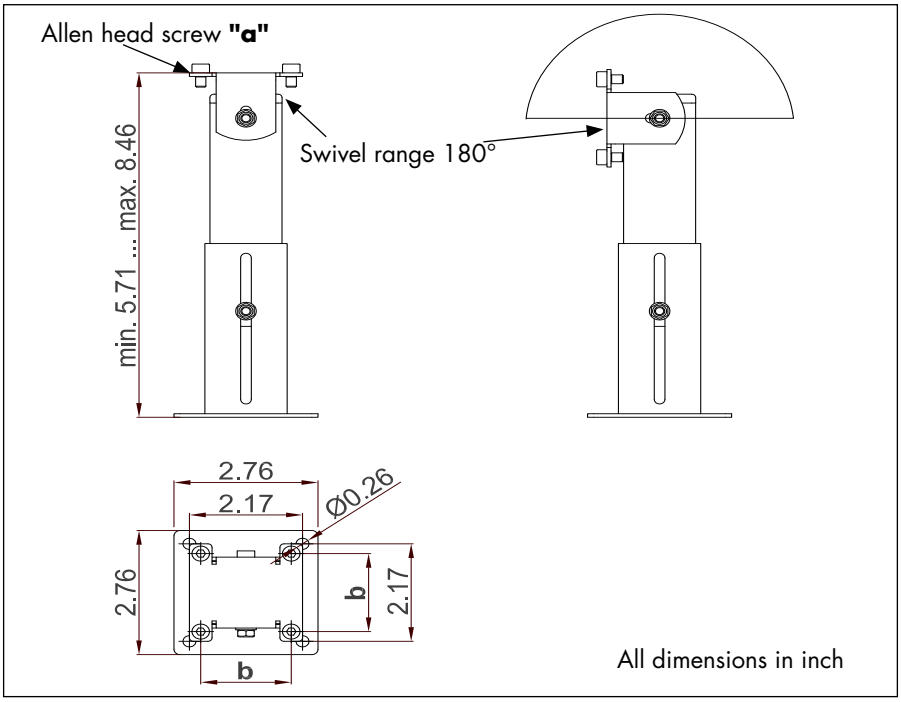
- **Distance bracket for floor and wall mounting.** The **head** can be **swiveled** up to **180°** and thus can adapt to the most different hitting angles of the door. The **height** of the **console** can be adjusted up to 2.76 inch. The base plate of the magnet is screwed to the bracket (4 Allen head 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	5.71 - 8.46 inch	15.28 - 20.47 inch
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)	

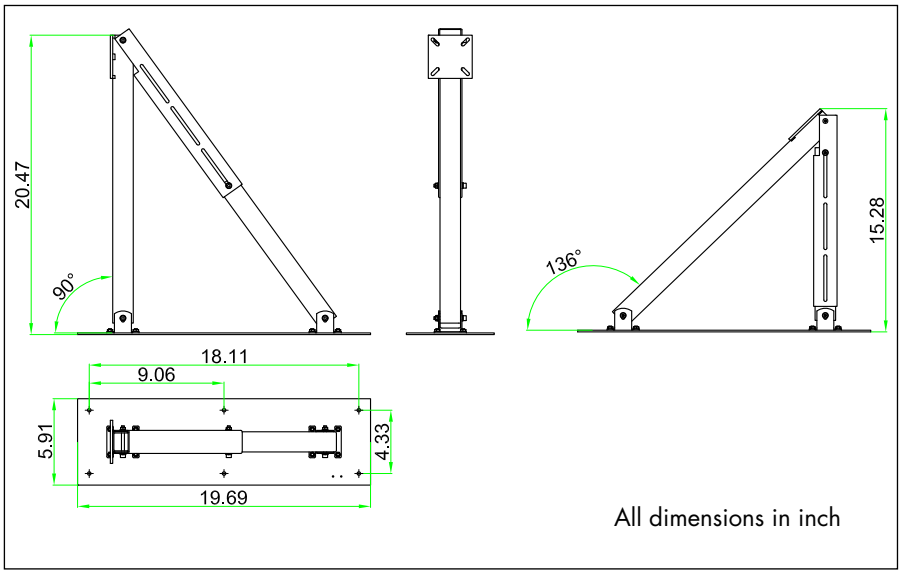
Dimensions and Part Numbers

Dimensions Distance Bracket



Bracket	a Dimension b		appropriate for magnets (e.g.)
040124	M4	1.73 inch	EM GD 50 R26, R26I, F26
040126	M5	1.73 inch	special types as EM GD 50 F25T
040127	M4	2.17 inch	EM GD 60 R26, R26I, F26

Dimensions Telescopic Bracket



Order Information

Distance bracket white, fixing measures 1.73x1.73"/M4	part no. 040124
Distance bracket white, fixing measures 1.73x1.73"/M5	part no. 040126
Distance bracket white, fixing measures 2.17x2.17"/M4	part no. 040127
Telescopic bracket white, oblong fixing holes	part no. 040147

Hand Switch for Hold-Open Systems

According to the fire protection regulations of both DIBt in Germany and EN 14637, an additional manual release button is required for hold-open systems on fire and smoke protection closures.

The button surface must be red and bear the inscription "Close door" or similar.

The hand switch must be mounted so that it is clearly visible and easy to operate. It must be located in the immediate vicinity of the closure and must not be concealed by the open door. It is recommended to install it at a height of approx. 4.59 ft +/- 0.66 ft above the floor.

The DICTATOR hand switch complies with these regulations. Pressing the push button releases the fire door.

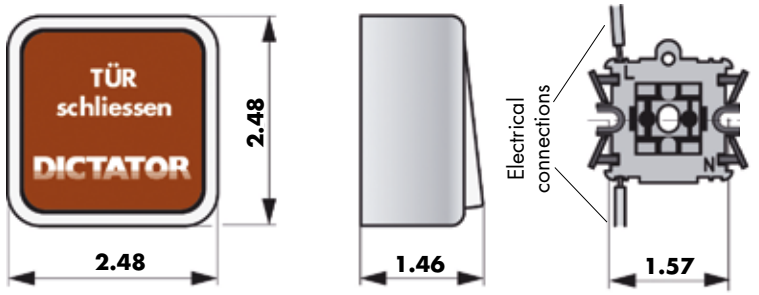
The DICTATOR hand switch is also available for flush mounting.

Order Information

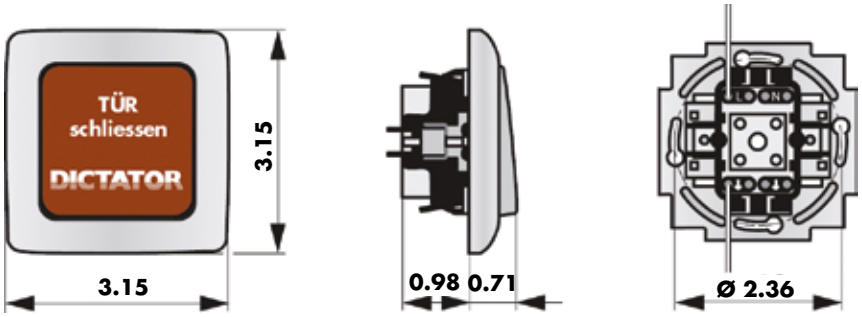
Hand switch for surface mounting	part no. 040005
Rocker red without print for hand switch no. 040005	part no. 040005WRN
Rocker white without print for hand switch no. 040005	part no. 040005WWN
Hand switch for flush mounting	part no. 040053

Dimensions

Hand switch for surface mounting



Hand switch for flush mounting



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.

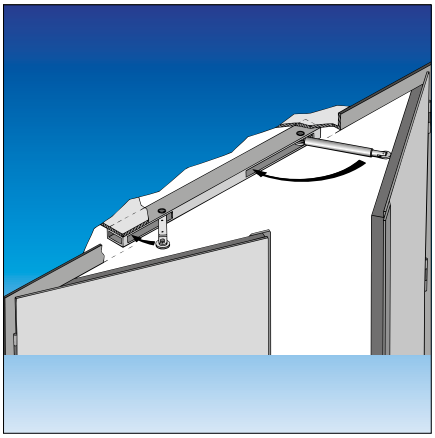
DICTATOR provides two different door sequence selector models:

- **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

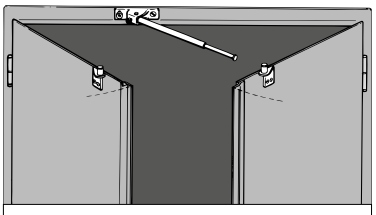
SR 90 door sequence selector	door sequence selector with 2 support brackets
SR 2000 door sequence selector	compact unit without support brackets,
	with/without locking of the integrated arms
Material	zinc-plated steel



Operation SR 90

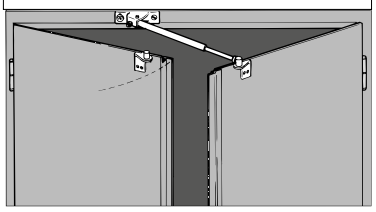
Operation

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.

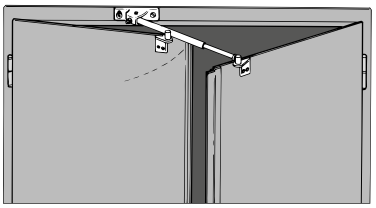


The door sequence selector controls the correct closing sequence of both door leaves:

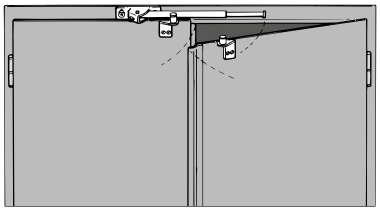
The door leaf to close finally (locking door leaf) hits the door sequence selector's telescopic arm with the pin of the support bracket and is kept in this position ...



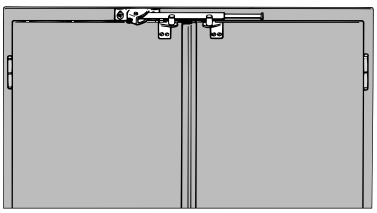
until the latch leaf with support bracket moves laterally across the door sequence selector's telescopic arm and...



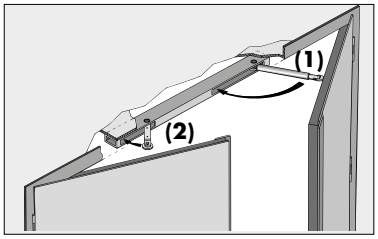
during closing takes the telescopic arm back with it to its closed position. When the telescopic arm lies flat against the door frame, the locking leaf is released and ...



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.

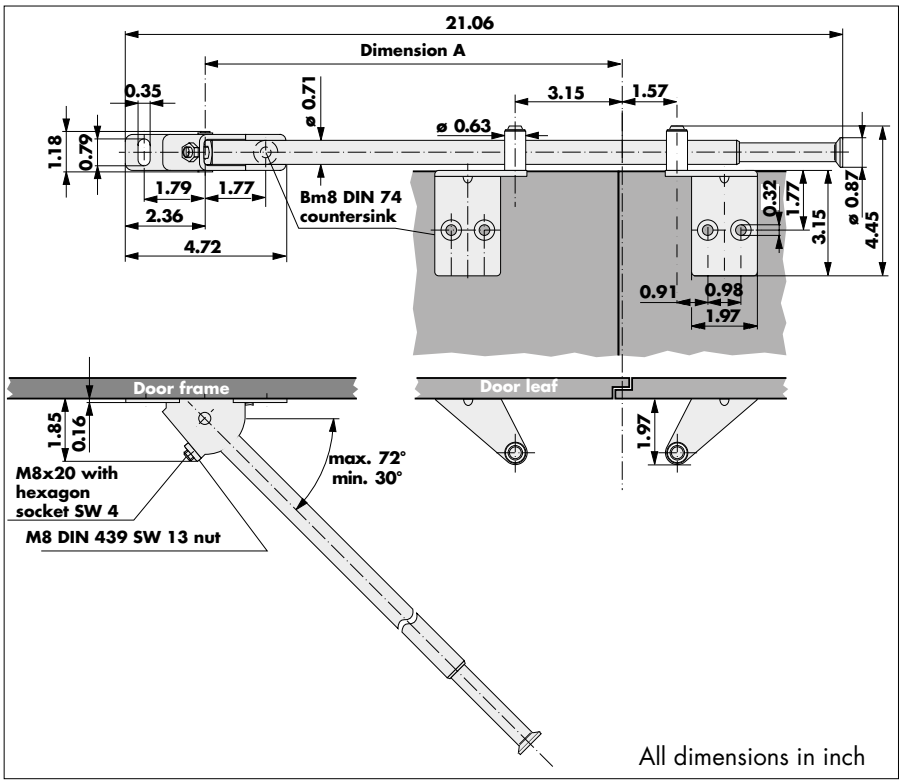
The SR 2000 E model will unfold its arms only after an alarm of one of the connected smoke detectors.

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. 440 lbs per door leaf
Width of door leaf	up to 5.25 ft per door leaf
Space required above the door	min. 1.18 inch
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

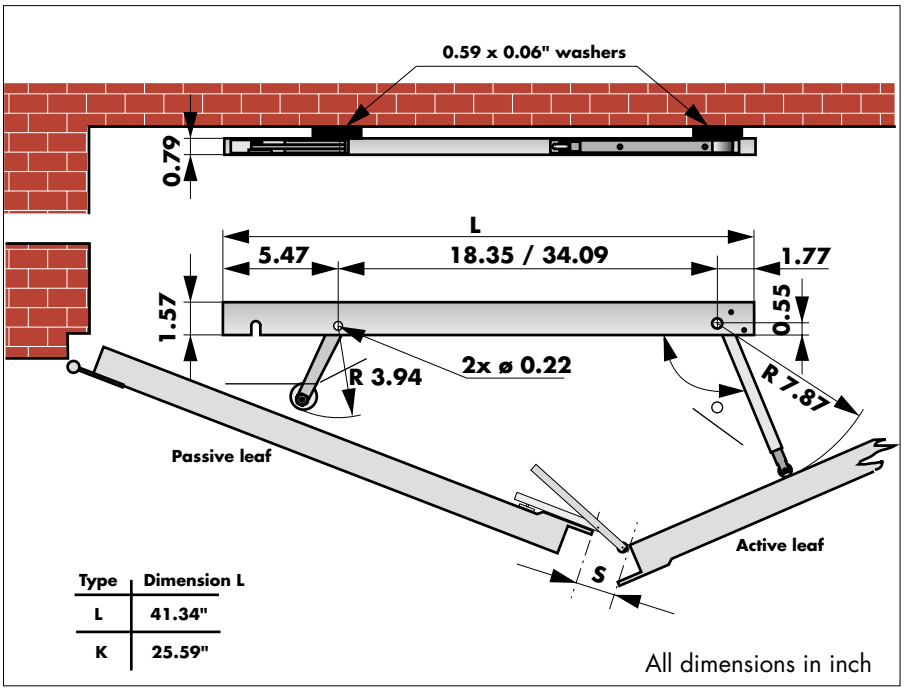
Order Information

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



Type	Dimension L
L	41.34"
K	25.59"

All dimensions in inch

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. 352 lbs per door leaf
Width of door leaf	2.46 ft to 4.92 ft per door leaf
Space required below the door frame	0.79 inch
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

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 **H**ot-**L**ocking-**S**afe thermal bolting offers protection for life and material in a simple and unobtrusive way. The thermal bolting is installed in the frame or the door at those places where there is the highest danger of a gap occurring. Normally the bolt is retracted in the casing and locked there by the soldered strut. Only when the surrounding temperature rises to about 1112 °F and the HLS thermal bolting has reached about 149 °F 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 about 1112 °F, soldered strut itself at about 149 °F
Spring force	approx. 2.48 lbf
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

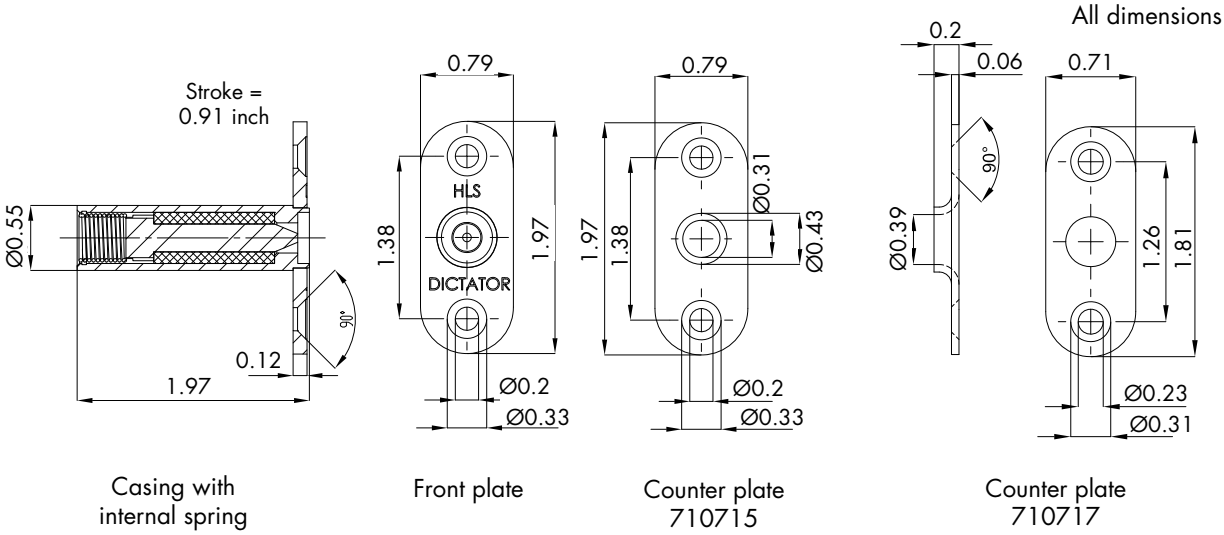
Versions

The HLS thermal bolting is available with two different counter plates:

- HLS thermal bolting, **standard version**, part no. 710715: the **counter plate** features just a **countersunk bore** as intake for the bolting pin.
- HLS thermal bolting, **counter plate with intake guide**, part no. 710717 (adjoining picture): here the bore in the counter plate is moulded as a funnel to enable the locking pin to easily enter the boring in the counter plate, even when the door has already deformed a little.

Dimensions

All dimensions in inch



Casing with internal spring

Front plate

Counter plate 710715

Counter plate 710717

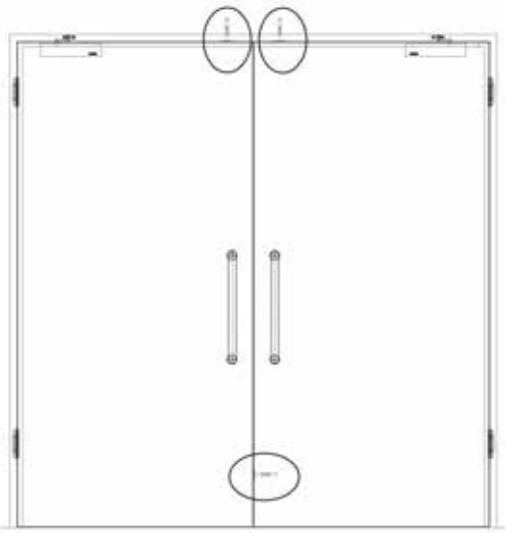
Mounting Information

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 the HLS thermal bolting and its counter plate are installed exactly opposite each other, so that the bolting pin can enter the hole in the counter plate.



Order Information

HLS thermal bolting TV2003-50, Hotmelt, 0.91 inch stroke	part no. 710715
HLS thermal bolting TV2003-50, Hotmelt, 0.91 inch stroke, counter plate with intake guide	part no. 710717