



GUIDEBOOK HOLD-OPEN SYSTEMS

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dictator – YOUR PARTNER FOR HOLD-OPEN SYSTEMS

In this guidebook, you will find an overview of the most important requirements of the regulations on hold-open systems applicable in Europe.

If you have any questions, we won't leave you alone! dictATOR not only supplies products, but also an "all-round carefree package". This ranges from expert advice on the planning and design of the hold-open system to support with any questions that may arise during installation, commissioning and acceptance, right through to assistance with maintenance and repair work.

For detailed know-how on the regulations, we offer training seminars on hold-open systems. This will not only provide you with the necessary expertise, but also with the required training certificates to carry out regular maintenance and inspections of hold-open systems. With all our courses, you will also receive permission to carry out the acceptance test for dictATOR hold-open systems for initial commissioning upon passing the test.

Do you have any questions about hold-open systems or would you like personal advice?
Contact us - we will be happy to help you!



Simply fill out our questionnaire - we will determine a suitable hold-open system for your requirements



Individual advice

A key service always included with our products



Many years of experience

in developing solutions for doors and gates



Special solutions are our "standard"

individual and complex system solutions, no matter whether for small or large projects



As a partner by your side

We support you from initial planning to post-purchase

WHY HOLD-OPEN SYSTEMS?

Fire and smoke can be extremely dangerous. If a fire breaks out in a building, it can spread very fast if no precautions have been taken. A danger for people and for the building and everything in it. Normally, larger buildings are divided into individual fire areas.

Under certain conditions, it is possible to have openings in the walls of the different fire areas, e.g. for doors.

Special fire or smoke doors must be used here, and they must always be able to close automatically in case of fire in order to prevent it from spreading through the building.



THE PROBLEM:

It still happens far too often that doors are held open by wedges or similar items.

But: doors held open in this way not only allow people or goods to easily pass through, but also smoke and fire in the event of a fire.

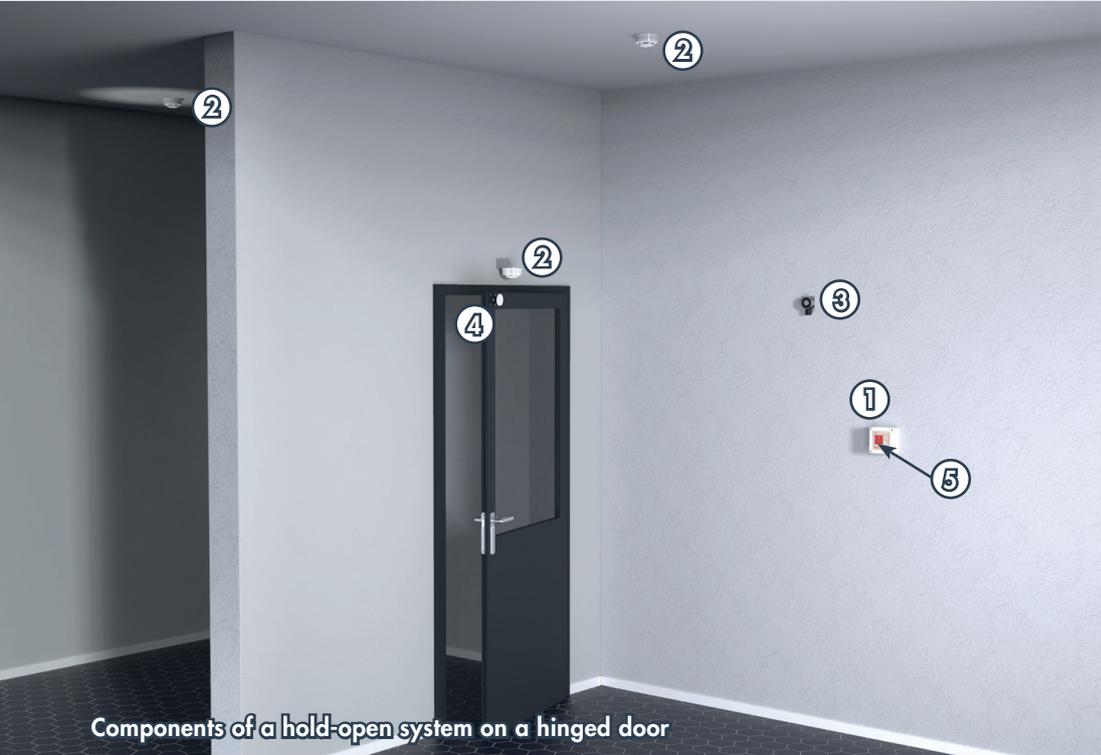


THE SOLUTION:

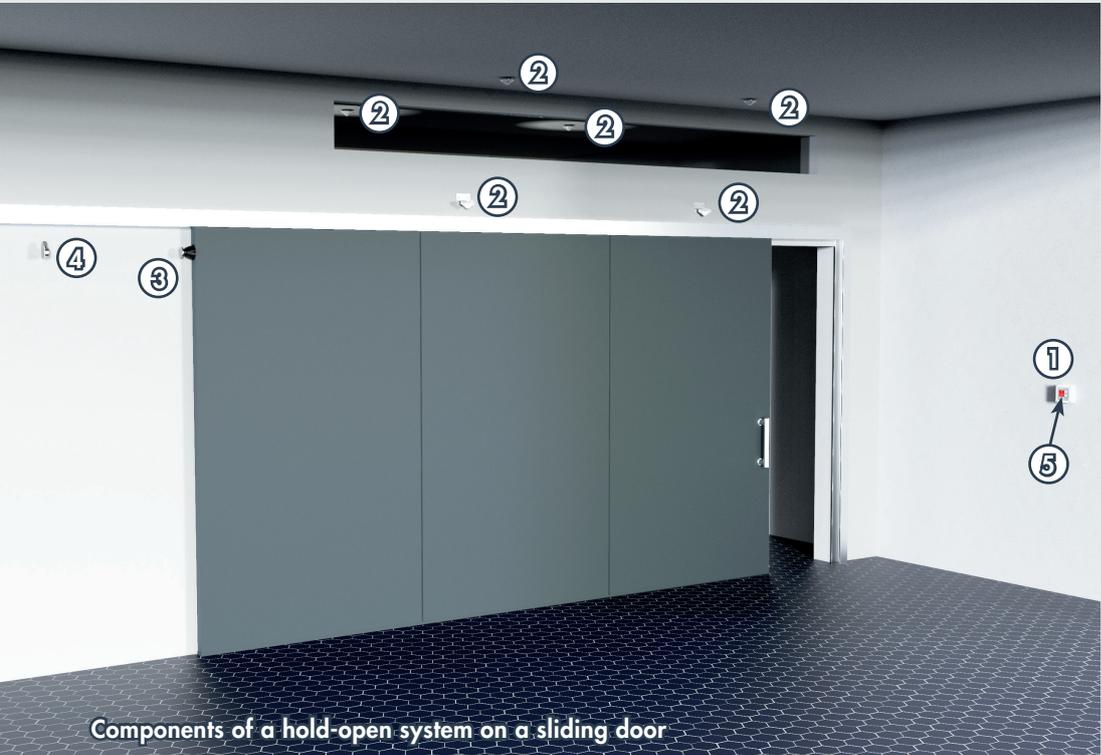
Hold-open systems provide safety for fire protection closures.

They ensure that doors and gates in fire zones can be left open for convenient operation, but always close automatically in the event of a fire.

HOLD-OPEN SYSTEM COMPONENTS



Components of a hold-open system on a hinged door



Components of a hold-open system on a sliding door

①

CENTRAL UNIT



All essential functions are combined here: control unit, power supply and hand switch

②

SMOKE & HEAT DETECTORS



Report a fire to the central unit and thus ensure that the hold-open system is triggered

③ ④

ELECTROMAGNETS & COUNTER PLATES



Keep fire doors open. The holding force of the electromagnets is only guaranteed with a corresponding counter plate

⑤

HAND SWITCH

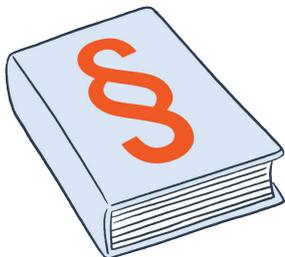


It must also be possible to trigger a hold-open system manually, regardless of fire detectors. A hand switch is required for this



For more details on DICTATOR hold-open system components, visit www.dictator.com > Fire door control solutions

GENERAL REGULATIONS FOR HOLD-OPEN SYSTEMS



The exact configuration of hold-open systems for fire, smoke, and other closures may vary from country to country.

For Europe, the standard for hold-open systems is EN 14637. However, this standard has not yet been harmonized, so that national regulations can completely or partially replace or supplement them.

EN 14637 contains large parts of the German regulations. In general, it determines how a hold-open system is constructed, where fire detectors and other components of the hold-open system are to be installed and what must be observed during the installation, commissioning and maintenance of a hold-open system.

If there are no clear regulations, the European standard EN 14637 for the installation of hold-open systems is to be regarded as a recognized set of rules and has legal character. This also applies if national regulations are insufficient in scope and are supplemented by the contents of EN 14637.

TYPE APPROVAL

All components of a compliant hold-open system must be listed in a general building approval or general type approval and their combination must be documented.



INSTALLATION AND MAINTENANCE INSTRUCTIONS

When installing hold-open systems, it is mandatory to observe the regulations from the respective approval for hold-open systems in Germany. They prescribe the exact positioning and design of the hold-open system.

Furthermore, the approval contains precise information on the execution of the acceptance test of a hold-open system after successful installation, as well as the periodic inspection tests required thereafter. These must be observed without fail.



STANDARDS & REGULATIONS

We have summarized the most important requirements for hold-open systems for fire and smoke protection closures according to the different components and the work needed:

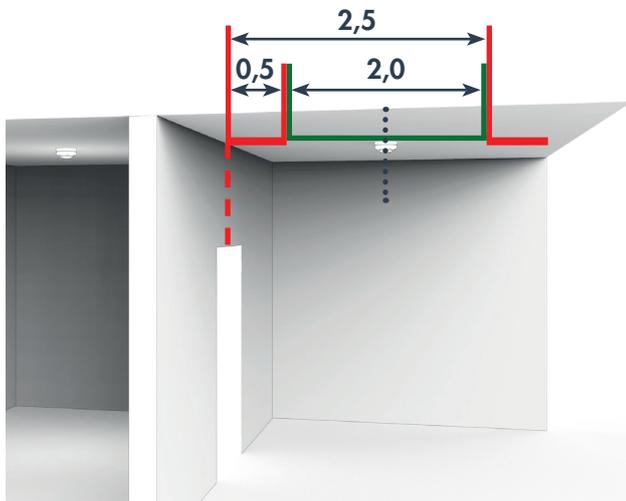
- Regulations for fire detectors
- Regulations for fixing the hold-open devices
- Regulations for manual release switches
- Regulations for acceptance, inspection & maintenance of hold-open systems

REGULATIONS FOR FIRE DETECTORS

DIFFERENTIATION OF DETECTORS ACCORDING TO THEIR INSTALLATION POSITION

CEILING DETECTORS

Ceiling detectors should be installed directly below the ceiling undersurface above the clear door opening – at least one on each side.

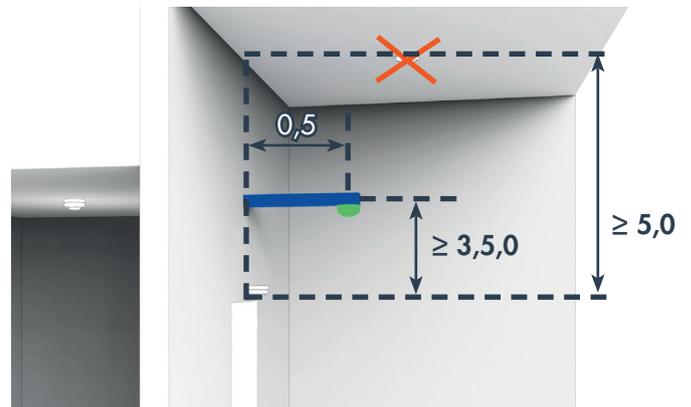


The horizontal distance of the detectors from the wall should be, at least, 0.5 m and 2.5 m at most.



Deckenmelder und Sturzmelder unterscheiden sich nur durch die Montageposition. Es sind keine unterschiedlichen Melder.

Wo die Melder montiert werden (an der Decke oder direkt am Türsturz) hängt u.a. vom Abstand zwischen Türoberkante und Decke sowie der Art des Brandschutzabschlusses ab.

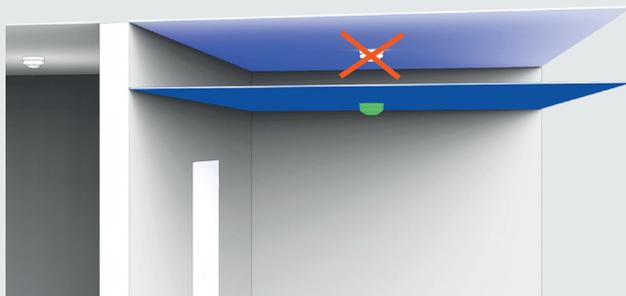


If the distance between the ceiling and the clear opening is more than 5 m, detectors should be installed on cantilever arms with a length of 0.5 m, and at least 3.5 m above the opening

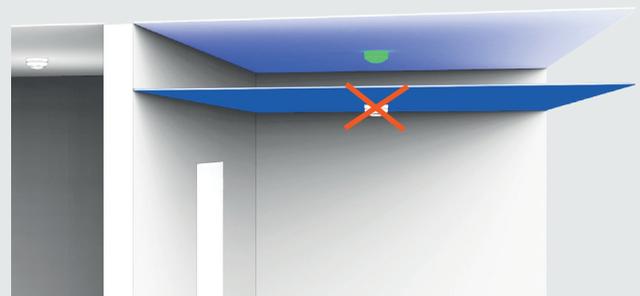
Special regulations for ceiling detectors on suspended ceilings

If suspended ceilings or false ceilings are installed, the following points must be clarified:

- Is the suspended ceiling permeable/impermeable to smoke?
- Where does the highest smoke concentration arise first?



The suspended ceiling is smoke-impermeable or classified in terms of fire protection > Ceiling detector is installed on the suspended ceiling

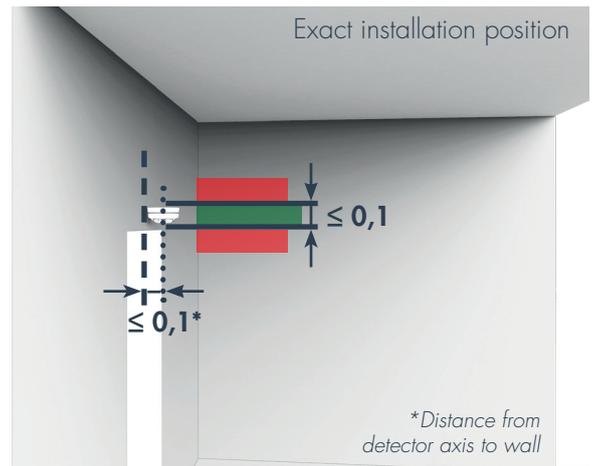
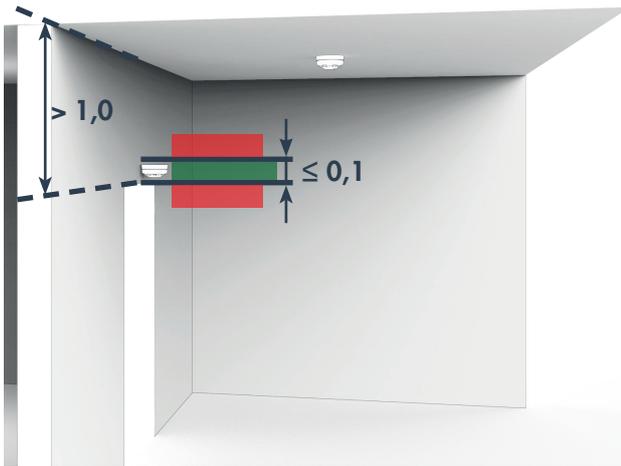


The suspended ceiling is smoke-permeable > Ceiling detector is installed on the bare ceiling

In the case of special ceiling situations (e.g. slanted ceilings, suspended ceilings, galleries), the fire detectors must be installed where a greater smoke concentration is to be expected first in the event of a fire.

LINTEL DETECTOR

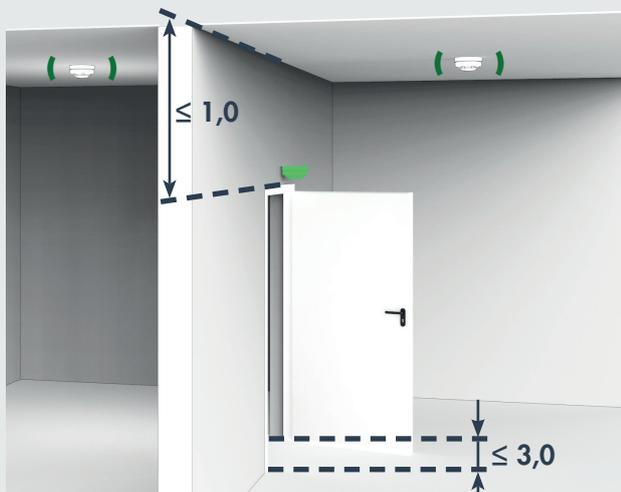
The lintel detector must be installed with its bracket directly on the wall above the opening, no more than 0.1 m above the lower edge of the lintel.



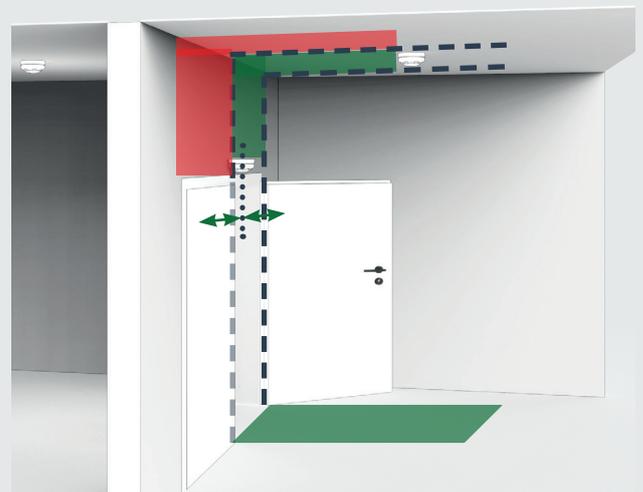
If the bottom part of the ceiling on one or both sides of the opening is more than 1.0 m above the top edge of the clear opening, at least one additional lintel detector must be fitted directly to the wall above the clear door opening and max. 0.1 m above the bottom edge of the lintel.

Special regulation for hinged doors

If the clear opening is not wider than 3.0 m and is closed by a hinged door, it is enough to install only one lintel detector instead of two ceiling detectors if the bottom part of the ceiling is no more than 1.0 m above the upper edge of the opening to be protected on both sides.



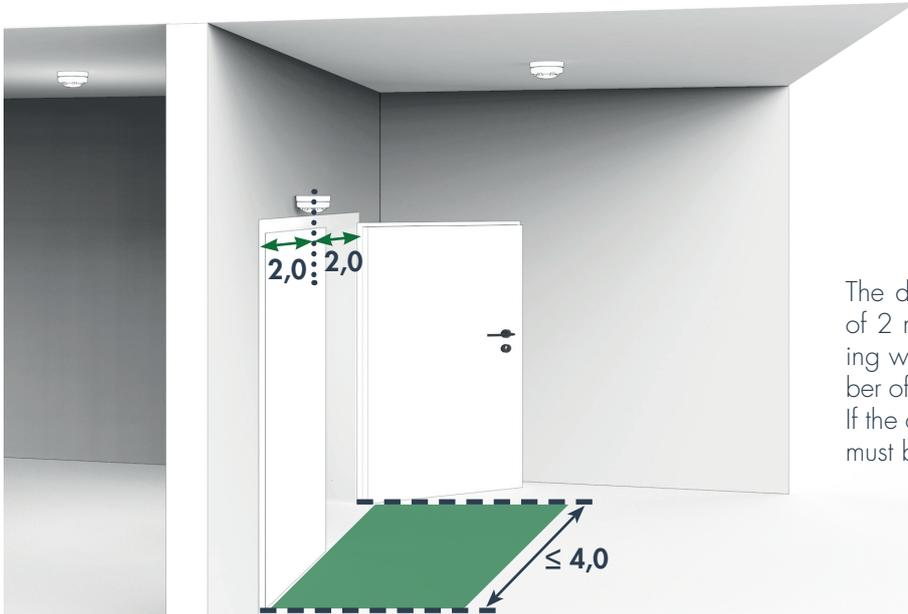
Here it can be chosen between 1 lintel detector or 2 ceiling detectors



In double hinged doors, both lintel and ceiling detectors must be installed above the active leaf.

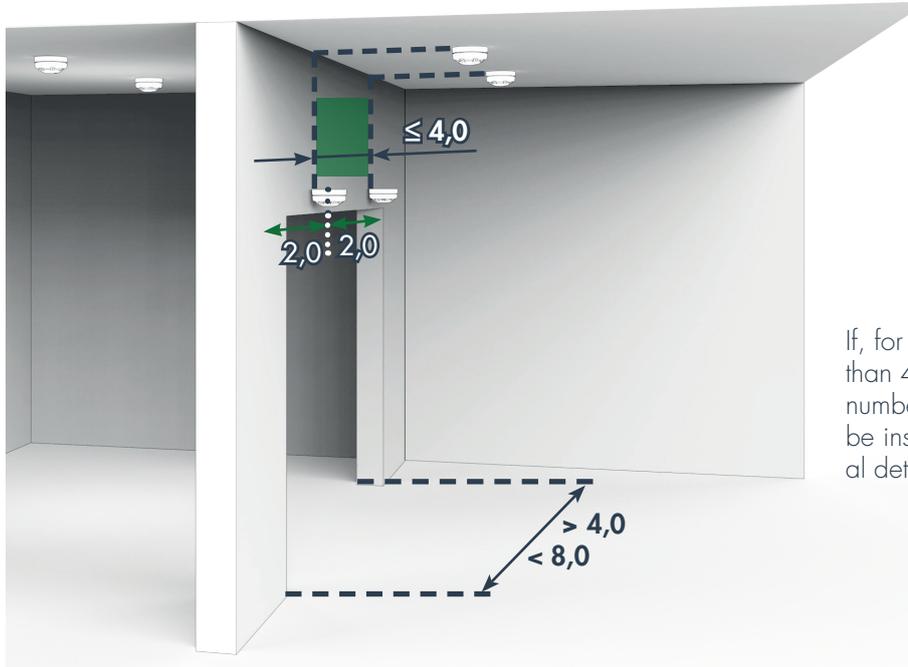
DETECTION RANGE / COVERAGE RADIUS OF FIRE DETECTORS

Maximum detection range per detector



The detector detects fire/smoke in a range of 2 meters in all directions. With an opening width of up to 4 meters, the simple number of ceiling and lintel detectors is sufficient. If the opening width is larger, more detectors must be installed.

Maximum distance between two detectors



If, for example, the opening width is greater than 4 meters but less than 8 meters, double number of lintel and ceiling detectors must be installed. The distance between individual detectors must not exceed 4 meters.

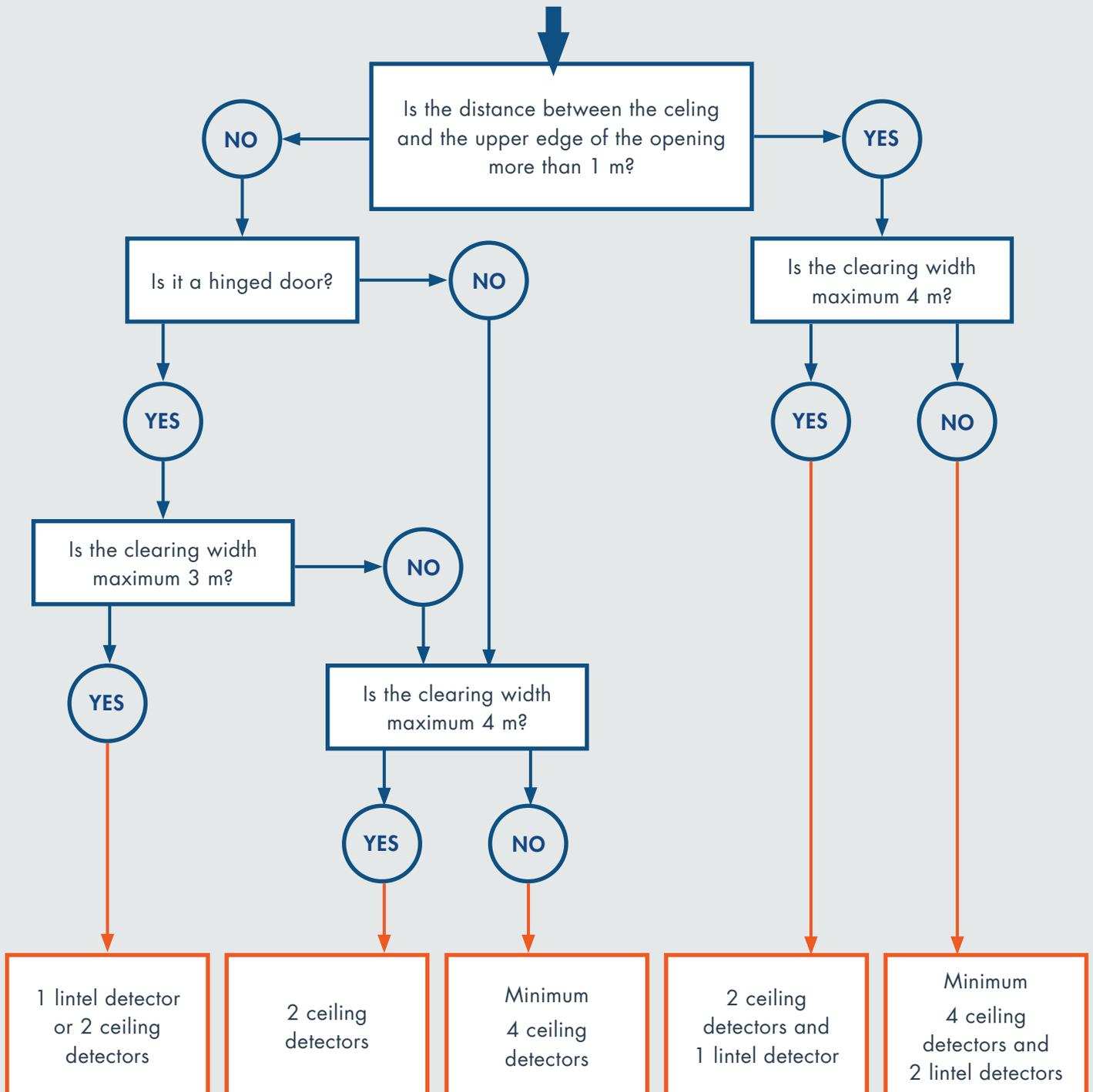
SMOKE OR HEAT DETECTOR?

Wherever possible, use smoke detectors.

If smoke or dust occurs during normal operation or manufacture, and there is a risk that smoke detectors will trigger false alarms, heat detectors should be used.

Heat detectors should not be used on smoke control closures, since smoke is cannot be detected by a heat detector and thus the smoke control function does not work.

DIAGRAM FOR DETERMINING THE REQUIRED NUMBER OF FIRE DETECTORS



If the width of the opening is greater than 4 m, additional detectors / detector pairs are required:



- Opening width > 4 meters: double number of detectors
- Opening width > 8 meters: triple number of detectors
- Opening width > 12 meters: four times the number of detectors

REGULATIONS FOR FIXING THE HOLD-OPEN DEVICES

ELECTROMAGNET WITH CORRESPONDING COUNTER PLATE

Normally, in a hold-open device with an electromagnet and a counter plate, the counter plate is installed on the door itself. The corresponding electromagnet is installed in the matching position on the wall, ceiling or floor – if necessary with an appropriate bracket.



GENERAL NOTES

- It must always be ensured that the protection function of the door is not impaired when fixing the counter plate.
- Under no circumstances can it be drilled through.
- Furthermore, manufacturer's specifications in the respective approval of the door must always be observed with regards to installation options.

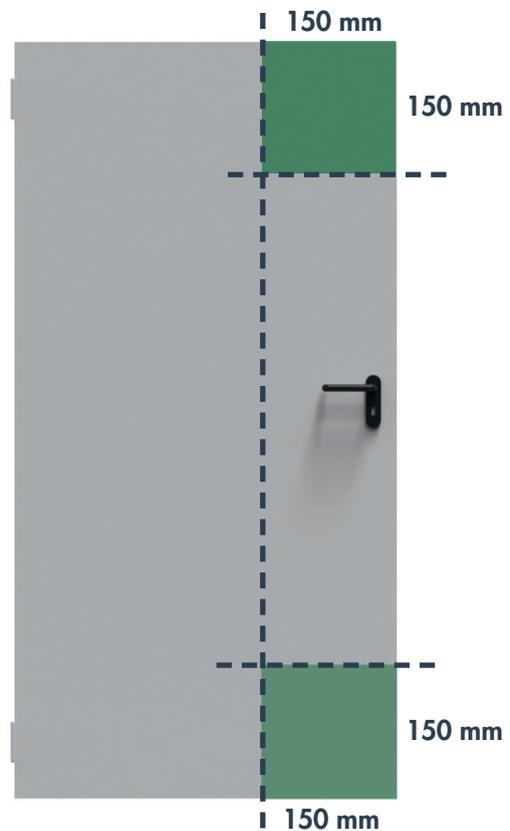


INSTALLATION POSITION

When installing the counter plate on hinged doors, it is recommended that the counter plate fixing screws are not more than 150 mm from the closing edge and from the top or bottom edge of the door leaf. However, the approval of the door manufacturer must always be observed in this respect.

FIXING

On steel doors without reinforcements (e.g. internal stiffening components), blind rivet nuts should be used, as otherwise a permanent attachment of the counter plate cannot be guaranteed.



Recommended positions for mounting the counter plate on the door

REGULATIONS FOR MANUAL RELEASE SWITCHES

REQUIREMENTS FOR MANUAL RELEASE SWITCHES



Design of the switch

- The button surface must be red
- The housing of the push-button must be at least 40 x 40 mm
- The operating field must have a diameter of at least 15 mm or a surface area of at least 15 x 15 mm
- It must bear the inscription "Close door" or similar (housing or push-button)

PUSH-BUTTONS IN ELECTROMAGNETS



In European countries without national regulations for this area, a release button in the magnet would be sufficient within the scope of EN 14637 if the electromagnets used had a label with the inscription "Close door".

A manual release button can be omitted if this is permitted by national regulations.

In countries in which there are no national regulations EN 14637 can be used, according to which the force required to overcome the hold-open device on hinged doors must be less than 120 Nm.



Each locking device (e.g. the electromagnet) on a fire closure or smoke closure must also be able to be released with the aid of a manual release switch without impairing the operational readiness of the tripping device (fire detector).

This means that it must be possible to close the door with the manual release switch even without an alarm from a fire detector.

Installation position

- It must be clearly visible and easy to use
- It must be in the immediate vicinity of the closure
- It cannot not be concealed by the held-open closure (the open door)

INSTALLATION POSITION OF THE MANUAL RELEASE SWITCH

- The manual release switch should be installed at a height of 1.4 m +/- 0.2 m above the floor.
- The manual release switch cannot be concealed by when the door is open, not even partially.



REGULATIONS FOR ACCEPTANCE, INSPECTION & MAINTENANCE OF HOLD-OPEN SYSTEMS

INFORMATION ON ACCEPTANCE TESTS OF HOLD-OPEN SYSTEMS

After the ready-to-use installation of a hold-open system, its faultless function and correct installation must be verified by an acceptance test. It must be arranged by the operator of the hold-open system.

The acceptance test for DICTATOR hold-open systems may only be carried out by specialists of the company DICTATOR or other specialists authorized by DICTATOR (e.g. after successful completion of a hold-open system seminar).

The acceptance test must include, at least, the items mentioned here:

- It must be checked whether the installed devices of the hold-open system comply with the devices specified in the general building authority approval.
- It must be checked whether the labeling of the installed devices corresponds to the labeling given in the general building authority approval.
- The interaction of all devices must be verified on the basis of the general building authority approval, whereby triggering must be carried out both by simulation of the fire parameter on which the functional principle of the detector is based and manually.
- It must be checked whether the closure is released for automatic closing if the hold-open system becomes inoperative (e.g. by removing a detector or by failure of the main power supply).



All inspections and maintenance must be documented.

The records must be deposited with the operator of the hold-open system.

After a successful acceptance test, the operator must permanently place a 105 mm x 52 mm sign – to be supplied by the manufacturer of the hold-open system – on the wall in the immediate vicinity of the closure with the following inscription:



MARKING OF THE CLOSING AREA

For closures held open by hold-open systems, the area required for the closing process must be kept clear at all times.

The area of a hold-open system should be clearly and visibly marked:

- by means of inscription,
- markings on the floor
- or similar



INSPECTION & MAINTENANCE OF HOLD-OPEN SYSTEMS



FUNCTION TEST MONTHLY / EVERY 3 MONTHS (by instructed person)

The functional test includes the following checks:

- the manual release
- the fire detectors by simulating the fire parameter (smoke detector with test aerosol/temperature detector with heat)
- whether the fire protection or smoke protection closure is released for automatic closing after triggering
- resetting the fire detectors from the alarm condition
- whether environmental influences impair the function of the system
- whether the use in the immediate vicinity of the hold-open system exerts negative influence on it (e.g. dust, water vapor)
- whether the function of the hold-open system is influenced by structural changes or interactions with other installations.

MAINTENANCE



MAINTENANCE YEARLY (by specialist)

The annual maintenance includes all elements of a functional test and additionally the following elements:

- Verification of the conformity of the documentation and the building authority approval
- Cleaning of the functionally relevant components of the hold-open system
- Preventive replacement of components of the hold-open system according to manufacturer's specifications
- Checking the hold-open system in the event of a power failure
- Checking the release of the hold-open system when a fire detector is removed

HOLD-OPEN SYSTEM SEMINARS

In Europe, regular maintenance and inspections of hold-open systems on fire and/or smoke closures may only be carried out by trained personnel familiar with the requirements of hold-open systems. With our training courses to become a specialist for DICTATOR hold-open systems, you can obtain the required certificate.



**Practical
content**



**Up-to-date
information**



**Experienced
instructors**



**Also as
webinar!**

OFFERED COURSES

- Specialist in hold-open systems according to EN 14637
- Specialist in hold-open systems according to DIN 14677
- DICTATOR manufacturer-specific components

*Are you interested in a seminar
for hold-open systems?
Contact us for a course tailored to your needs!*

DICTATOR – The Driving Force in Motion Control

ABOUT DICTATOR

DICTATOR is a worldwide group with its main focus of operation in Europe. The headquarters is located in Neusäß near Augsburg. Our products are manufactured in our own production facilities in Europe. This ensures the highest quality and allows us to provide custom solutions for every customer requirement at short notice

HEADQUARTERS

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PRODUCT RANGE

- Lifts & lift equipment
- Door closing solutions
- Hydraulic dampers
- Door & gate operators
- Fire door operators
- Fire door control solutions
- Gas springs
- Door interlock systems



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