Application Notes

ABB i-bus® EIB

Security and surveillance product range

Intelligent Installation Systems

SK 9

ABB STOTZ-KONTAKT

ABB

Foreword

The aim of this leaflet is to give the installer of EIB systems an overview of the range of applications and products available from ABB STOTZ-KONTAKT in the field of security and surveillance systems.

The illustrated examples present a selection of applications from the many different possibilities that exist in functional buildings or in the residential sector.

For further information, please contact the EIB security and installation systems department at ABB STOTZ-KONTAKT (see back page).

Our sales advisors are of course also available to provide you with relevant information. The contact addresses can be found on page 27.

Marketing for EIB installation and security systems
ABB STOTZ-KONTAKT

Contents

1 Basic principles

1.1 Introduction

While developing the ABB i-bus® EIB, ABB STOTZ-KONTAKT has attached particular importance to the area of surveillance and security for both people and equipment.

Apart from EIB products for security-related applications, ABB STOTZ-KONTAKT offers its market partners a whole range of sensors and detectors as well as the necessary know-how.

These products can be installed in new or existing EIB installations both in the residential sector and in functional buildings.

It is possible to implement a variety of security and surveillance functions using the outlined range of sensors and detectors. Typical examples are the surveillance of windows and doors for opening or locking, monitoring for water pipe burst, monitoring for the risk of fire with smoke detectors as well as interior surveillance using motion detectors.

1.2 Terms

The following overview provides a definition of the various terms that are frequently used in security and surveillance technology.

Detector, Zone
A detector or sensor is a device that by evaluating appropriate physical variables (e.g. heat radiation, vibration), detects danger and interrupts or shorts a circuit. When several detectors are combined in this type of circuit, these detectors then form a zone.

Zone terminal
The zone terminal evaluates the signals from the detectors or rather the zones, and routes this information via the EIB.

Opening surveillance, lock monitoring
Monitoring of windows, doors, skylights or similar to determine if they are opened or closed is called opening surveillance.

The locked or bolted status of doors, windows and skylights is supervised using lock monitoring. A disturbance in a lock monitoring circuit or zone does not lead to an alarm but prevents the system from being set.

Peripheral protection, surface surveillance
Peripheral protection involves the monitoring of all doors, windows and openings that lead outside as well as any other possible access points. Surfaces (panes of glass, external walls) can be monitored using so-called surface surveillance which is used to detect someone breaking in (damage to the surface), climbing through (damage and penetration) or reaching in ("smash and grab").

Internal surveillance
Movements within closed rooms are analysed directly by internal surveillance detectors.

Panic alarms
These are push buttons that are operated should a person find himself in danger. An alarm is activated immediately after operation of the push button.

Sabotage surveillance
The attempt to shut down the whole or part of a surveillance system or to interfere with its proper function, leads to a sabotage alarm. Cables and parts of the installation are thus monitored, e.g. with tamper contacts.

Set mode
This term relates to burglar alarm systems. If a system is set, an alarm is triggered should an attempted break-in be detected. If the system is unset, there is no alarm. The system is set or unset using an arming device such as a key lock or combination lock. Generally a connection between the arming mechanism and the entrance locking device make it impossible to enter the building inadvertently when the system is set.

Alarm devices
Local alarm signals are achieved with external signalling devices (sirens) and optical signalling devices (flashing or strobe lights). Indoor acoustic signalling devices can be used for an alarm within the monitored area.

A silent alarm can be made via a telephone dialling device. The most important states of an installation (alarm, sabotage, intruder) can thus be routed via the public telephone network to a security company or to private telephone extensions.

1.3 Technical principles

Zones

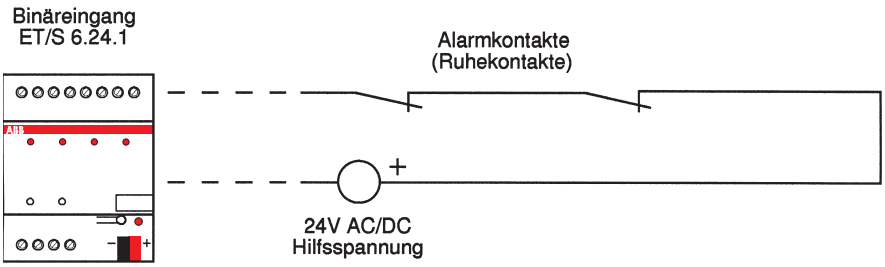
The principle of a zone is based on a circuit that is shorted, interrupted or changed in some way by the alarm contacts of the alarm sensors (activated when danger is detected). The connected EIB device, e.g. a zone terminal or a binary input, registers these short circuits or interruptions by voltage measurements at the input terminals and routes this information via the EIB.

There is however a fundamental difference between “normal” binary inputs and the zone terminal. The zone terminal monitors in addition, the connected cables for their functional reliability.

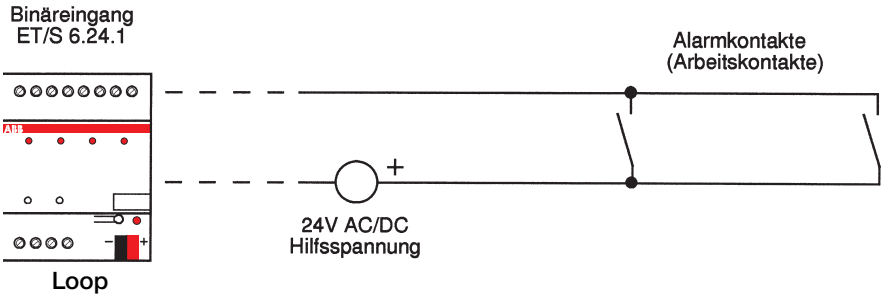
The requirement for additional cable monitoring stems from the security industry where a distinction is made between unmonitored cables (so-called secondary circuits) on the one hand and cables that are monitored for short circuits and interruptions (primary circuits) on the other hand. Primary circuits have considerable advantages over secondary circuits.

Secondary circuits

Secondary circuits are subdivided into closed and open loop circuits.



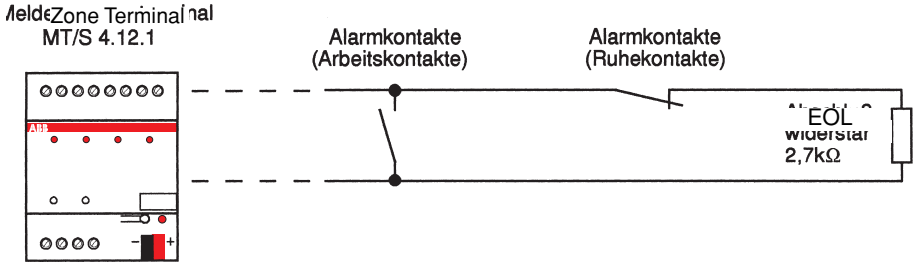
In this example the closed loop circuit is closed in its normal state and the voltage at the binary input is 24 V. If at least one of the contacts is opened, the circuit is interrupted, the voltage at the binary input falls to 0 V and a telegram is sent.



Open circuits are in comparison open in their normal state and the voltage at the binary input is 0 V. If at least one contact is closed, the circuit is closed, the voltage at the binary input increases to 24 V and a corresponding telegram is sent.

Both these circuits can be manipulated relatively easily. It is not possible, for example, to evaluate contacts that are after a short circuit in a closed loop circuit or that are after an interruption in an open loop circuit.

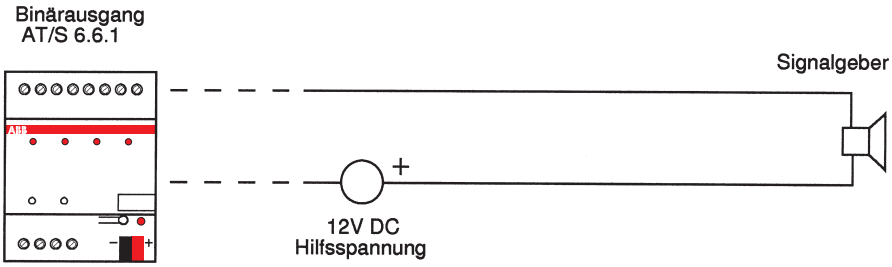
Primary circuits
With primary circuits there is the advantage of being able to connect normally closed and normally open contacts in the same circuit. Normally there is a defined voltage at the input of the zone terminal. There is a clear change in this voltage as a result of a short circuit or interruption of the circuit. A signal is immediately sent if the circuits become unserviceable due to an inadvertent modification, a sabotage attempt or a wrong connection.



The zone terminal operates with primary circuits in which a 2.7 kΩ End of Line (EOL) resistor is soldered after the last sensor. According to VdS regulations, a maximum of 20 detectors may be included in a zone.

Sabotage zones
Sabotage zones are likewise primary circuits with an EOL resistor of 2.7 kΩ. All the sabotage contacts (housing contacts) from the different parts of the system are included in the sabotage zone. One zone can also have a maximum of 20 devices.

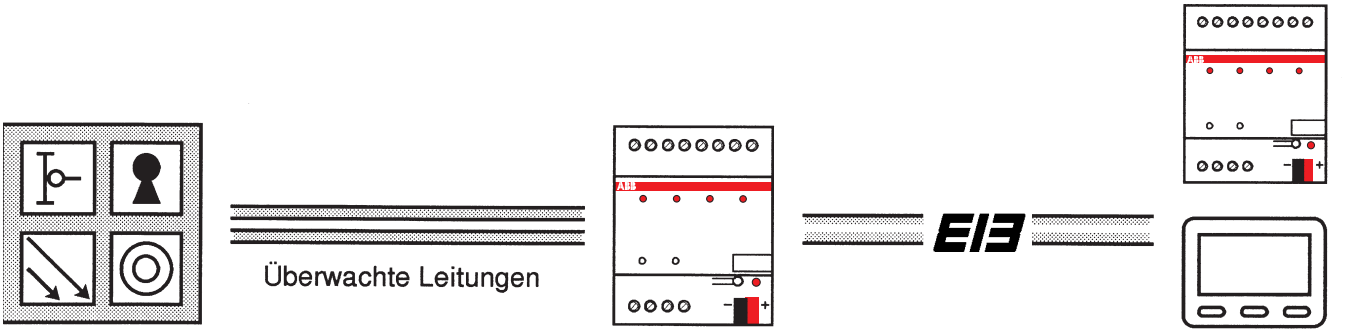
Alarm devices



2 Device configuration

2.1 Zone Terminal

Zone Terminal MT/S 4.12.1
The zone terminal is designed to act as the interface between common security sensors and the EIB. It is used for the monitored connection of passive detectors (e.g. magnetic contacts and/or glass-breakage sensors) to the ABB i-bus® EIB and/or the connection of other potential free contacts in applications with increased security requirements.



The device has four zone inputs whose status is displayed via 4 LEDs. The primary circuits enable the connection of magnet reed contacts and passive detectors with alarm storage indicators, e.g. glass-breakage sensors or vibration detectors. The primary circuits are to be terminated with 2.7 kΩ EOL resistors. Two 12 V signal outputs, “walk test” and “set/unset” make it possible to control conventional passive infrared detectors. An external 12 V DC supply voltage is required for operation. Typical applications are the surveillance of doors and windows for opening or glass breakage, the monitoring of rooms by motion detectors. Different versions of the application software allow various operating modes.

Zone Terminal MT/S 4.12.1

This is used for the monitored connection of passive detectors (e.g. magnetic contacts or glass-breakage sensors) to the ABB i-bus® EIB and/or the connection of other potential free contacts in applications with increased security requirements. An external 12 V DC power supply is required.

Description	MW	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
Zone terminal	4	**MT/S 4.12.1**	GH Q631 0027 R0111	9378802	0.16	1

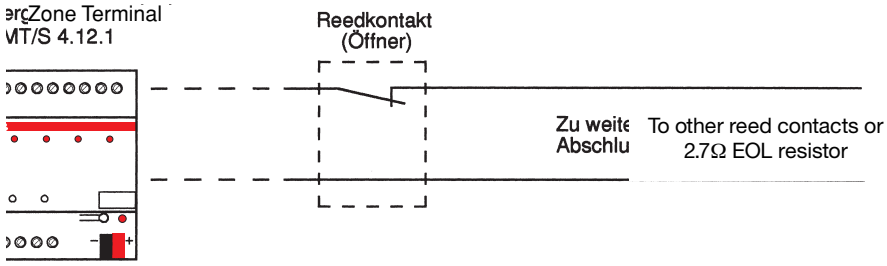
2.2 Detectors for peripheral protection, opening surveillance

Magnet reed contacts

Magnet reed contacts are used for opening surveillance of doors, windows and skylights. They consist of two separate components – a magnet and a reed contact.

The magnet is normally mounted on the window sash or the door panel. The reed contact is then placed directly next to or above the magnet on the window or door frame.

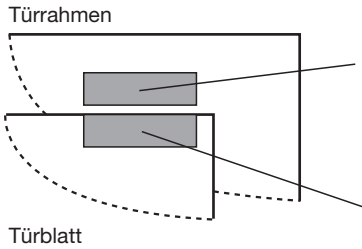
The reed contact is closed under the influence of the magnetic field. If the window or door is opened, the magnet moves away from the reed contact and the influence of the magnetic field on the contact is interrupted. The reed contact is opened again and interrupts the zone. This causes the zone terminal to send a telegram onto the bus. Magnet reed contacts are always fitted within the monitored area (on inside surface of the window or the door).



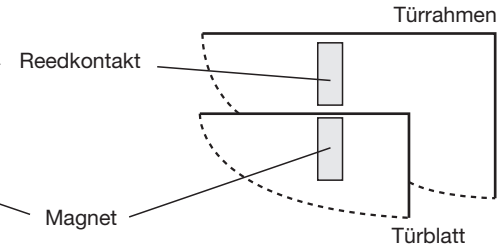
ABB's universal magnet reed contact is suitable for most door and window surveillance applications in the home or the office.

The design of this magnet reed contact allows it to be screwed onto or drilled into the door or window. The magnet and the reed contact are mounted parallel to each other for surface assembly and end to end when drilled at clearances of up to 10 mm. When installing onto ferromagnetic materials (e.g. steel doors), screw mounting together with additional spacer discs should be used.

Screw mounting



Drilling



Magnet reed contact set MRS

For screwing or drilling. Contents: 1 magnet, 1 reed contact with 4.0 m connection cable LIYY 4 x 0.14 mm^2, 2 housings, 2 spacer plates, 2 flanges, 4 antimagnetic fixing screws.

Saver set: Contents: 20 magnets, 20 reed contacts with 4.0 m connection cable LIYY 4 x 0.14 mm^2, 40 housings, 40 spacer plates, 40 flanges, 40 antimagnetic fixing screws.

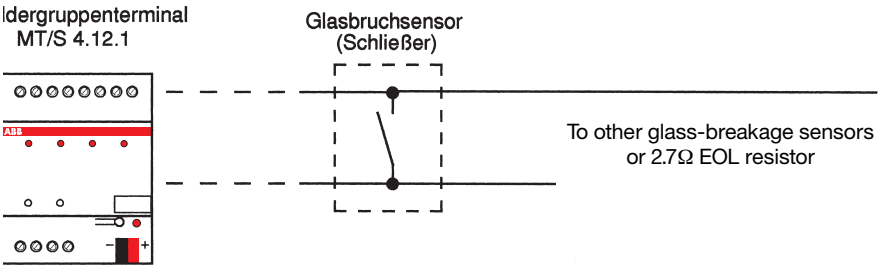
Saver set for drilling: 20 magnets, 20 reed contacts with 4.0 m connection cable LIYY 4 x 0.14 mm^2.

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
with connection cable white	**MRS/w**	GH V921 0032 V0003	**02420 7**	0.06	1
with connection cable brown	**MRS/b**	GH V921 0032 V0004	**02430 6**	0.06	1
Saver set white	**VMRS/w**	GH V921 0032 V0005	**02440 5**	1.05	1
Saver set brown	**VMRS/b**	GH V921 0032 V0006	**02450 4**	1.05	1
for drilling **VdS no. G 191549**	**VMRS/E**	GH V921 0032 V0007	**70130 6**	1.00	1

Glass-breakage sensors

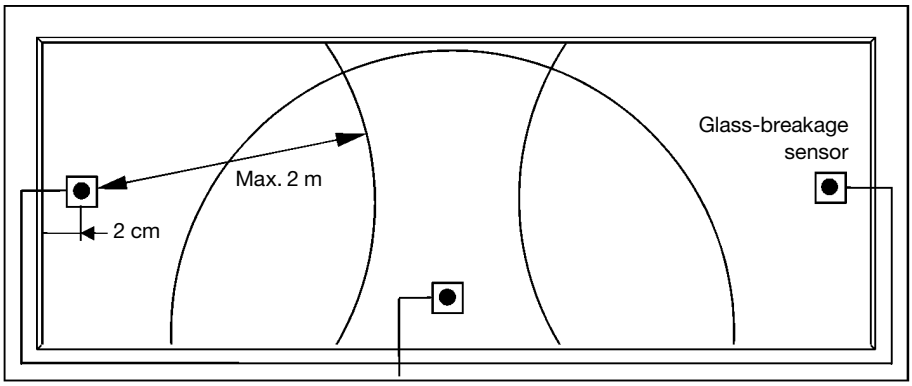
Glass-breakage sensors are used for the surveillance of glass surfaces of windows and doors. The vibrations which result from forcible damage to a pane of glass are detected and evaluated.

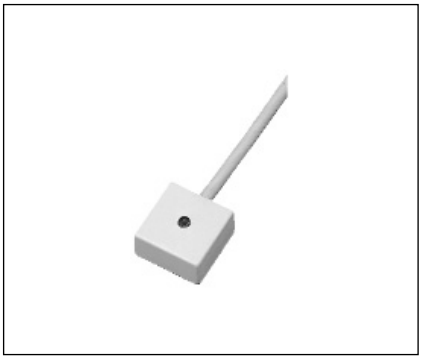
Passive glass-breakage sensors use a piezoelectric microphone in order to register these vibrations. On breaking of the pane of glass the respective zone is short circuited. A LED on the sensor lights to show that it has tripped.



Passive glass-breakage sensors must be wired into the zone in such a way that the cable connection to the zone terminal cannot be interrupted by other detectors, i.e. reed contacts must always be looped into the zone after glass-breakage sensors. Should the line be interrupted before the glass-breakage sensor, the trip recognition LED is extinguished.

The maximum monitoring range for the SPGS glass-breakage sensor from ABB is approx. 2 m for a pane of glass that is 2 to 15 mm thick. This is sufficient for most windows. For larger panes, as described on the next page, several detectors can be combined to ensure sufficient surface surveillance. The glass-break age sensor is fixed onto the pane with Loctite adhesive at a minimum distance of 2 cm away from the frame. They should also be mounted so that it can immediately be detected if the sensor becomes detached from the pane, i.e. the cable should not be routed from above.





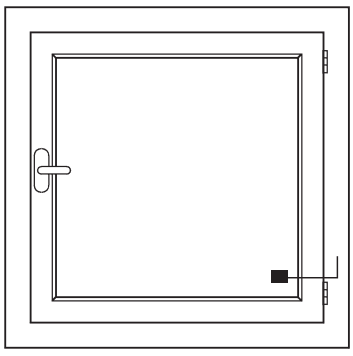
Glass-breakage sensor SPGS

High interference immunity, integrated alarm indicator, extremely compact dimensions with 5 m connection cable. Dimensions: H x W x D = 18 x 18 x 9 mm.

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
white brown **VdS no. G 194524**	**SPGS/w** **SPGS/b**	GH V922 0004 V0009 GH V922 0004 V0010	**61420 0** **61430 9**	0.08 0.08	10 10
Loctite adhesive	**LKS**	GH Q400 1906 R0001	**39280 1**	0.3	1

Vibration detectors

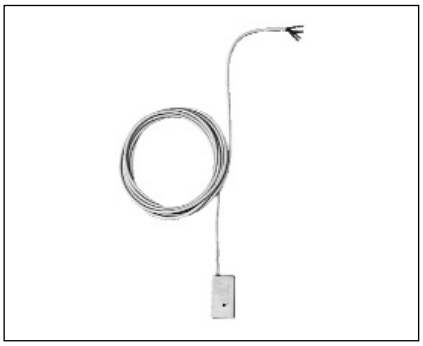
Vibration detectors register the vibrations that result from damage to surfaces, e.g. panes of glass, glass units, door panels or walls. If vibrations are detected, the alarm contact is closed and the zone is short-circuited.



The sensors can either be glued or screwed onto the surface they are to monitor. The effective range differs according to the material and is a maximum of 1.1 m for glass and a maximum of 0.5 m for concrete, steel and wood.

Mounting example: Tilt window

In the same way as glass-breakage sensors, vibration detectors have an LED to indicate which detector has been tripped. This also means that the detectors must be looped into the zone in such a way that their cable connection to the zone terminal cannot be interrupted by other contacts.



Vibration detector EMA

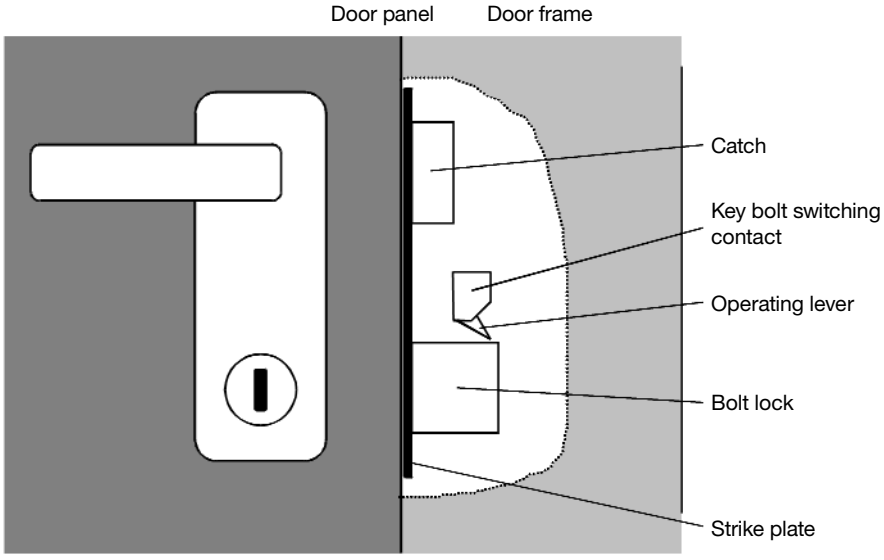
Vibration detector with LED display. Sensitivity can be individually adjusted. The connection cable LIYY 4 x 0.14 mm^2 is 4 m long.

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
white brown **VdS no. G 194519**	**EMA/w** **EMA/b**	GH V922 0009 V0003 GH V922 0009 V0004	**57190 9** **57200 5**	0.02 0.02	1 1

2.3 Detectors for lock monitoring

Key bolt switching contact

Key bolt switching contacts are used for lock monitoring of doors. These switches are mounted behind the strike plate so that the contact is operated via the bolt lock. With double locks, the key bolt contact should be mounted so that it only responds on the second turn of the key.



The key bolt switching contact WRK from ABB has a two-way contact and can thus be used as a normally closed or a normally open contact. The compact design and adjustable switching point of the sensitive micro-switch make it easy to install.

Key bolt switching contact WRK/W

For installation in the strike plate. Watertight IP 67 with 2.5 m connection cable LIYY 3 x 0.14 mm^2.

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
Key bolt switching contact **VdS no. G 190008**	**WRK/W**	GH V925 0022 V0005	**02460 3**	0.02	1

Lock monitoring for windows

One method of lock monitoring for windows is achieved indirectly via thrust bolts which are mounted in the window frames. If the window is closed but not locked, the thrust bolts push the window open again a small way. The magnet reed contact that is either mounted on or in the window is therefore not closed. The corresponding zone is thus disrupted.

Locking monitoring for windows VSÜ

Lock monitoring is achieved with a special magnet and a reed contact.
The magnet is mounted on the push rod of the window sash and the reed contact is mounted on the frame.

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
Set **VdS no. G 190074**	**VSÜ**	GH V921 0018 V0022	**70120 7**	0.06	1

2.4 Detectors for interior surveillance

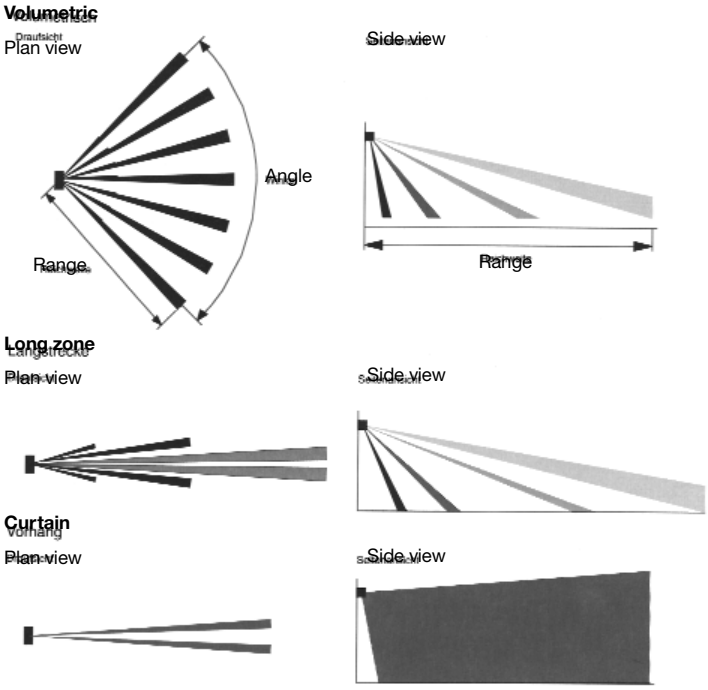
Motion detectors

Nowadays the task of room monitoring is mainly performed by motion detectors. There are various products on the market which work with different processes, e.g. passive infrared, microwave or a combination of infrared and microwave. Passive infrared motion detectors are particularly suited for simple applications.

The ABB motion detectors react to thermal movement via photodiodes that are sensitive to infrared. The monitoring area is divided into zones by an optical lens. If the heat radiation changes in a zone within a short time period, the alarm con-tact of the detector is opened and the zone is interrupted. This motion detector is most adept at picking up movement in a direction that is at a tangent to the detector.

As a result, sources of error can be produced by air conditioning systems, direct sunlight and other heat sources. For this reason it is necessary to pay particular attention to the positioning of the detector when installing such devices.

There are motion detectors for different monitoring areas. With “volumetric monitoring”, entire rooms can be monitored. “Long zone monitoring” is suitable for long rooms or corridors while “curtain monitoring” is used for the surveillance of surfaces in order to detect someone climbing in.



The size of the monitoring area can be adjusted at the device. In contrast to simple detectors like magnet reed contacts, motion detectors require an external power supply. The alarm contact is looped into a zone and if necessary the internal sabotage contact is included in the sabotage zone.

A walk test can be carried out by applying +12 V at the test input or by a jumper within the motion detector. Each detected movement is then indicated by an LED on the device.

The motion detector also has an alarm memory, i.e. the detector stores any attempted break-in that is detected while the system is set. Once the system has been unset, a LED indicates which detector has been tripped.

The motion detectors IR/N and IR/D offer ideal solutions for interior surveillance in private and small commercial buildings.

By exchanging the lenses, the IR/N motion detector can be converted from a volumetric monitoring device into a long zone or curtain monitoring device.

Passive infrared detector IR/N

The detector is fitted as standard with a 12 metre volumetric lens with a special-purpose lens on the underside of the detector forming an anti-crawl-under zone.

As an option a 20 m long-range lens can be used for surveillance of long corridors, etc. or a 10 m curtain lens for surveillance, e.g. of display windows.

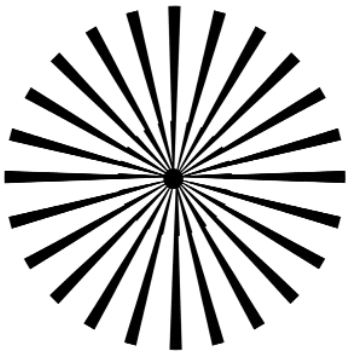
The detector is fitted with a walk test LED and an alarm memory. With CE mark.
Power consumption during alarm: typically 8 mA.
Dimensions: H x W x D = 96 x 62 x 45 mm Colour: RAL 9010 pure white

Effective working ranges with a mounting height of 2.3 m	Angle	Range	Zones	Planes
Normal lens (IR/N):	86°	12 m	17	4
Long zone lens (IR/L):	7°	20 m	7	5
Curtain lens (IR/V):	5°	10 m	1 rectangular	

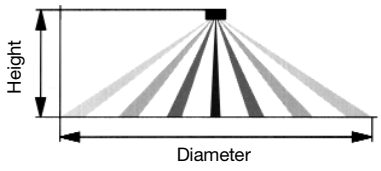
Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
Infrared detector **VdS no. G 196548**	**IR/N**	GH V923 0039 V0001	**61710 2**	0.10	1
Mounting bracket	**MW**	GH V923 0039 V0020	**66580 6**	0.02	1
Long zone lens (5) **VdS no. G 196549**	**IR/L**	GH V923 0039 V0002	**61720 1**	0.01	1
Curtain lens (5) **VdS no. G 196550**	**IR/V**	GH V923 0039 V0003	**61730 0**	0.01	1

The IR/D motion detector is specifically intended for ceiling mounting with a volumetric circular monitoring area. The maximum mounting height is 3.6 m.
The diameter of the monitoring area can be calculated by the formula:
Diameter = mounting height x 3

Plan view



Side view



Ceiling detector IR/D

Effective range with a mounting height of: 2.4 m = 7.3 m Ø, 3.6 m = 10.8 m Ø
Power consumption during alarm: typically 8 mA,
Dimensions: Ø = 107 mm, height = 28 mm
Colour: RAL 9010 pure white. With CE mark.

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
Ceiling detector	**IR/D**	GH V923 0039 V0009	**61740 9**	0.35	1

Panic alarms

Panic alarms are used wherever personal safety and the early detection of pos-sible danger are important.

ABB's emergency call buttons contain an alarm contact (normally closed contact) that can be triggered manually in an emergency by pressing a button. The emergency call button ND complies with police regulations since it features permanent trip recognition and a built-in sabotage contact (normally closed contact).

Emergency call button ND

For manual alarm tripping: momentary-contact function with cover contact.
Dimensions of surface-mounted version: H x W x D = 90 x 90 x 28.5 mm (ND)
Dimensions of flush-mounted version for installation in 55 mm Ø boxes:
90 x 90 x 13.5 mm (NDU)

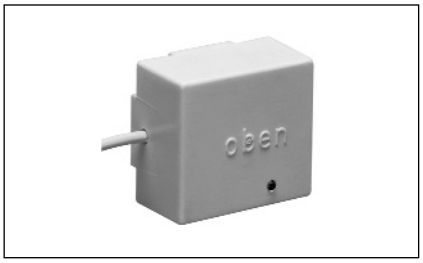
Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
Surface- white mounted brown Flush-mounted white **VdS no. G 187012**	**ND/w** **ND/b** **NDU/w**	GH Q713 2443 R0011 GH Q713 2444 R0011 GH Q713 2443 R0021	**02540 2** **02560 0** **02550 1**	0.1 0.1 0.1	1 1 1
Spare paper (10 pcs.)	**EP**	GH Q713 2443 R0003	**04220 1**	0.01	1

2.5 Technical detectors

Water detectors

Water detectors make possible the early detection of water ingress, e.g. due to pipe fractures, ingress of groundwater and sewage, water from washing machines and dish washers, etc. before the damage becomes too expensive.

The water detector SWM 4 is a resin-encapsulated water detector with gold-plated electrodes. It does not need its own power supply as it is fed directly from the zone. A LED on the upper side of the housing is used to indicate the detector that has been triggered.



Water detector SWM 4

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
Water detector	**SWM 4**	GH Q403 0001 R0004	**05740 3**	0.21	1

Quiescent power consumption is approx. 0.12 mA at 12 V. With CE mark.

Smoke detectors
Smoke detectors are used for early detection of smoke so that possible injury to people and damage to property can be avoided or limited in the event of a fire.

ABB's optical smoke detectors are used wherever fire needs to be detected in its initial stages. An external power supply of 12 V DC is required. The momentary-contact push button DTA is used to reset the stored alarms.

Optical smoke detector SOM 2412

For the early detection of smoke. The power supply is 12 V which means that the smoke detector can be connected to the zone terminal. A potential free, normally open contact is used as an alarm output (30 V, 1 A max.). With CE mark.

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
Optical smoke detector including base	**SOM 2412**	GH V920 0006 V0003	**65120 5**	0.45	1
Momentary-contact push-button	**DTA**	GV SB29 3923 V0001	**07420 2**	0.1	1

2.6 Signalling devices

Signalling devices for indoor installation
The solid-state siren is used for alarm purposes within the monitored area, e.g. for fault indication, to indicate an attempted break-in in an occupied building or as a panic alarm.

Solid-state siren SSS

An electronic solid-state siren with an intermittent tone for indoor installation. Overall dimensions: Ø x H = 90 x 37 mm. With CE mark.

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
12 V, 15 m A	**SSS**	GH V927 0001 V0001	**02320 0**	0.13	1

Signalling devices for outdoor installation

Combined signalling device made up of a siren and a strobe light for external or local alarm signals.

Combined signalling device SEVS/GB, totally corrosion-resistant

Siren in a protective aluminium housing with additional protective enamel coating with strobe light mounted on top. Protected against sabotage by a case tamper contact. The alarm inputs are wired onto a terminal strip.
With 4–16 mm^2 terminals for equipotential bonding.
Dimensions: H x W x D = 340 x 180 x 200 mm. With CE mark.

Description	**Short description**	Order no.	**bbn 40 13232 EAN**	Unit weight kg	Pack units
12 V DC; 350 mA 110 dB(A) 12 V DC; typ. 400 mA; 5 Ws **VdS no. G 184005**	**SEVS/GB**	GH Q401 0005 R0003	**66380 2**	2.53	1

3 Notes for use

3.1 Planning

Detailed planning is the first prerequisite for an error-free and effective security and surveillance system.

Opening surveillance
Magnet reed contacts should be fitted so that every possible type of opening is monitored (e.g. the opening and tilting of windows or the removal of hinges from doors). If necessary, several magnet reed contacts can be used.

Lock monitoring
For lock monitoring it is important that the detectors are only in the undisturbed state if the door or window is properly locked.

Peripheral protection
For peripheral protection, particular care should be taken with cellar windows and shafts, skylights, lofts and openings larger than 20 x 20 cm. If exterior windows are monitored with glass-breakage sensors, they should be mounted so that the trip recognition LED is easily visible.
If using LIYY 4 x 0.14 mm^2 the cable may not be longer than 6 m.

Interior surveillance
When using motion detectors, possible disruptive influences should be taken into consideration. No objects should be positioned in the room at a later stage that limit the monitoring area. All the motion detectors should be installed in vibration free positions. It is preferable that volumetric detectors are installed in the corners of rooms. Pets should also be considered, as they can trigger the detector and cause an alarm.

Panic alarms
Emergency call buttons should be installed in areas where danger can occur (e.g. halls bedroom), should be inconspicuous and easy to reach. Care should be taken during installation that they cannot be operated by unauthorised persons or inadvertently (by children or pets).

Signalling devices
External sirens should be fitted at a distance from each other (e.g. at opposite corners of the house). Optical signalling devices should be visible as far away as possible from the direction in which help will come from. The indoor sirens must be audible throughout the monitored area. All external signalling devices should be fitted so that they can only be reached with aid (e.g. a ladder).

Set mode
An alarm system can only be set if no zone is disturbed and there are no disruptions in the mains or supply voltage. Entering the monitored area while the system is set must be prevented by an electromagnetic bolt (e.g. blocking element) or by the arming device itself in order to prevent false alarms.

3.2 Power supply

The zone terminal and various other detectors from the ABB STOTZ-KONTAKT product range require an SELV 12 V DC supply voltage. When selecting a power supply, the maximum current consumption of the system should be considered.

If the system is also to function when there is a mains failure, additional measures are necessary (e.g. battery backup). In this case, not only the bus voltage but also the 12 V supply voltage must have a standby supply.

3.3 Regulations

The following standards and regulations are relevant for the set-up of a security and surveillance system.

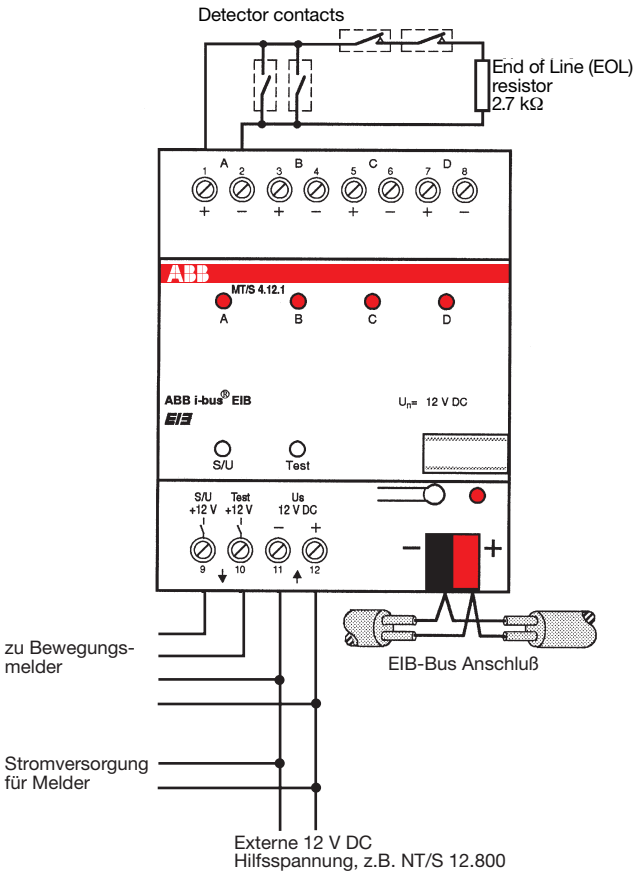
DIN VDE 0833
Fire, burglar and panic alarm signalling systems
Part 1: General statements
Part 2: Statements for burglar and panic alarms

VdS guidelines
Guidelines for burglar alarms (planning and installation) from the Verband der Sachversicherer e.V. in Cologne (Pamphlet no. VdS 2195)
Verband der Sachversicherer e.V.
Formularstelle
Postfach 10 37 53
50477 Köln

4 Wiring diagrams

4.1 EIB components

Zone Terminal MT/S 4.12.1



Terminal assignment

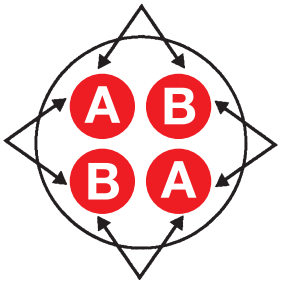
1, 2	Zone A with 2.7 kΩ EOL resistor
3, 4	Zone B with 2.7 kΩ EOL resistor
5, 6	Zone C with 2.7 kΩ EOL resistor
7, 8	Zone D with 2.7 kΩ EOL resistor
9	Set/unset, high if zone terminal is set (terminal 11: 0 V)
10	Walk test, high if walk test is active (terminal 11: 0 V)
11	0 V DC supply voltage input
12	+12 V DC supply voltage input

4.2 Peripheral protection Opening surveillance

Passive glass-breakage sensors, vibration detectors, magnet reed contacts, lock monitoring for windows, water detectors

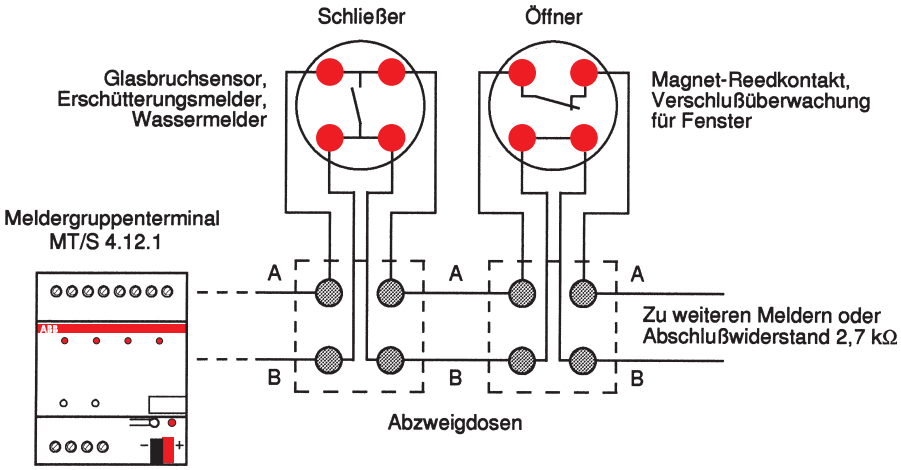
The connection of these detectors is carried out via a 4-core connection cable LIYY 4 x 0.14 mm^2. When looping the detectors in zones, one refers to adjacent cores.

Nebeneinanderliegende Adern



2 adjacent cores are fed at a time to the zone terminal (primary circuit). The two remaining wires are routed to other detectors or to the EOL resistor. It does not matter which adjacent cores are selected.

Structure of a zone circuit (primary circuit)

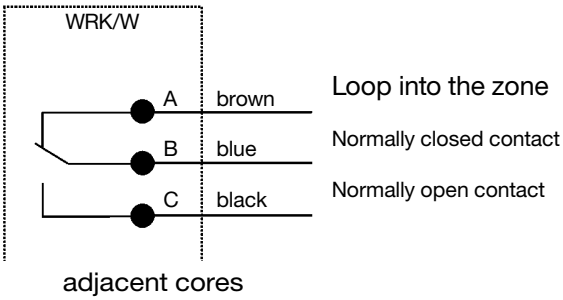


Important note

If glass-breakage sensors, vibration detectors or water detectors are placed in the same zone as reed contacts, the reed contacts must always be looped into the zone last.

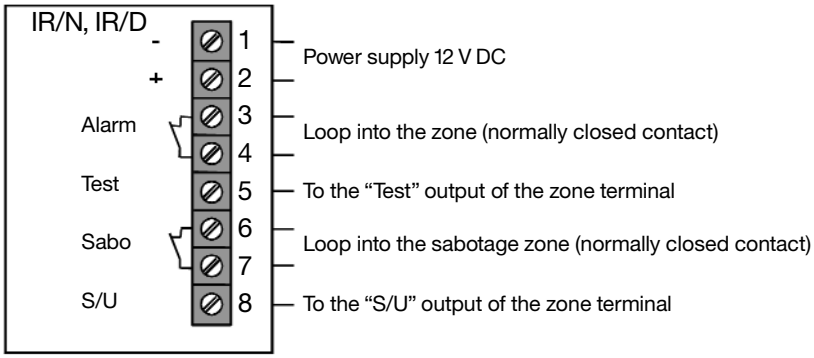
4.3 Lock monitoring

Key bolt switching contact WRK



4.4 Interior surveillance

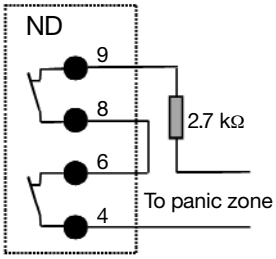
Infrared motion detector IR/N, IR/D



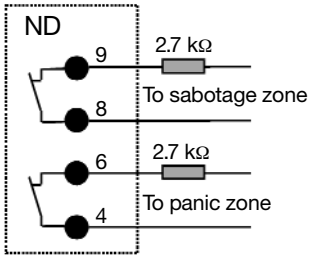
4.5 Panic alarms

Emergency call button ND

Combined panic and sabotage alarms

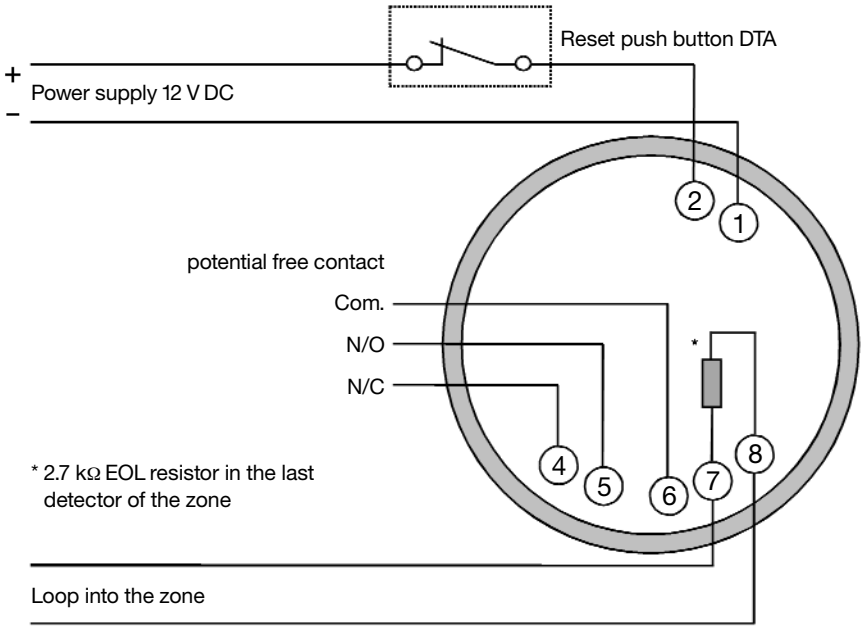


Separate panic and sabotage alarms



4.6 Technical detectors

Optical smoke detector SOM 2412

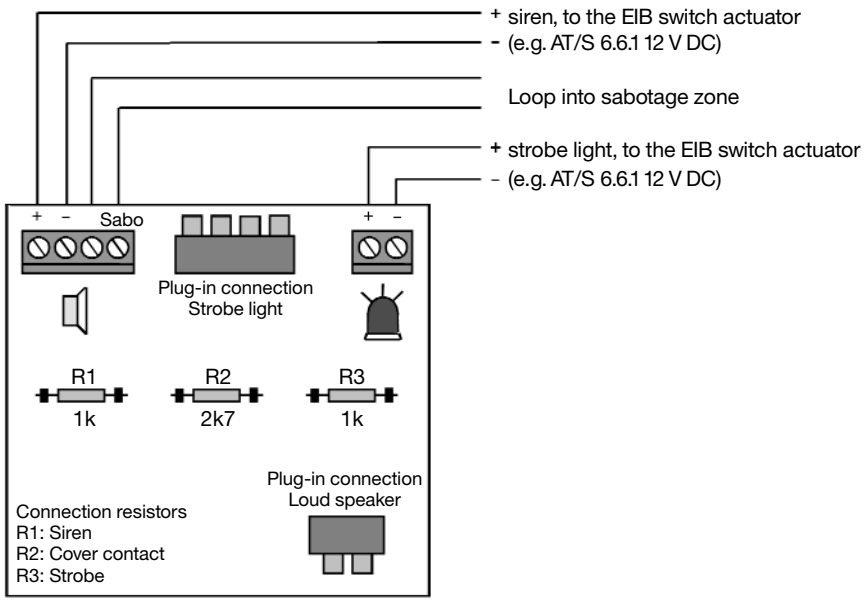


Water detector SWM 4

See peripheral protection/opening surveillance

4.7 Signalling devices

Combined signalling device SEVS/GB



5 Overview: Security and surveillance product range

Operation

Binary input
ET/S 6.24.1

Push button interface
TS/U 4.1

- Arming devices
- Reset switch
- Operating device

Display and alarm signals

LCD display
LD/W

Panel unit
TL/E 12.1

Binary output
AT/S 6.6.1

- LEDs
- Incandescent lamps
- Signalling devices
- Blocking elements
- Locking devices

Monitoring

Zone Terminal
MT/S 4.12.1

- Window/door contacts
- Glass-breakage sensors
- Motion detectors
- Smoke detectors
- Water detectors

Evaluation and control functions

Logic unit
LB/S 1.1

- EIB alarm functions (evaluation)
  - Group Alarms
  - Group fault/sabotage
  - Arming block/acknowledgement
- EIB central functions
  - Light on/off
  - Shutter up/down
  - Presence simulation

Remote indication

Teleswitch
TS/AP

Intelligent Installation System
ABB i-bus® EIB

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