Technical data

Passive infrared detector IR/B

Security technology

Passive infrared detector IR/B

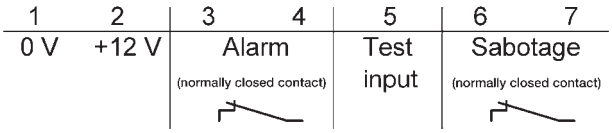
Description

The passive infrared detector is an intruder detector (VdS class B), which senses and reports movements within its surveillance area. It enables volumetric monitoring of up to 15 m and can optionally be used with a long-range lens (20 m) or curtain lens (10 m). The infrared detector is fitted with a walk test LED. The signals 'Alarm' (movement) and 'Sabotage' are carried out by a floating contact. The infrared detector achieves its high level of reliability against false alarms due to its high-quality HEX technology with a 12-fold pyroelement detection in each zone as well as a pulse counter.

Technical data

Operating voltage	9…16 V DC
Power consumption (idle state)	8 mA
Power consumption (alarm)	7.5 mA
Ripple factor	2 V PP at 12 V DC
Range adaptation	+ 3° to – 11° vertical, ± 5° horizontal for corner mounting
Walk test LED	Internal activation (DIP switch 1) or via + 12 V at the test input
Temperature range	– 10 °C to 55 °C
Temperature compensation	Increased sensitivity if the room temperature approaches body temperature
Alarm output	Floating normally closed contact: Max. 30 V/50 mA with 10 ohm series resistor (contact closed if no alarm and 12 V supply voltage present)
Alarm duration	Approx. 3 seconds
Tamper contact:	Floating normally closed contact: Max. 30 V/50 mA
Test input	Normal 0 V (Low) or open connection + 12 V (High) to activate the walk test
Dimensions (H x W X D)	98 x 69 x 48 mm
VdS no.	G104 522

Circuit diagram



Terminal	L108	L208	L840/MG4	L840/MG8	MT/U 2.12.1	MT/S 4.12.1
1	V –	V –	2	V –	8 [4]	11 [4]
2	V +	V +	1	V +	7 [4]	12 [4]
3	Zone [1]	Zone [1]	Zone [1]	Zone [1]	Zone	Zone
4	Zone [1]	Zone [1]	Zone [1]	Zone [1]	Zone	Zone
5		22 [2]	13	2	5	10
6		9	Zone [3]	Zone [3]	Zone [3]	Zone [3]
7		C	Zone [3]	Zone [3]	Zone [3]	Zone [3]

[1] Zone which is switched off at 'Internal set'
(e.g. factory setting for L108: Zone 1 and Zone 2 or L208: Zone 1, Zone 2 and Zone 3)

[2] Assign terminal 24 with + 12 V and program relay 2 as 'Walk test'

[3] Sabotage zone

[4] External 12 V DC auxiliary voltage required

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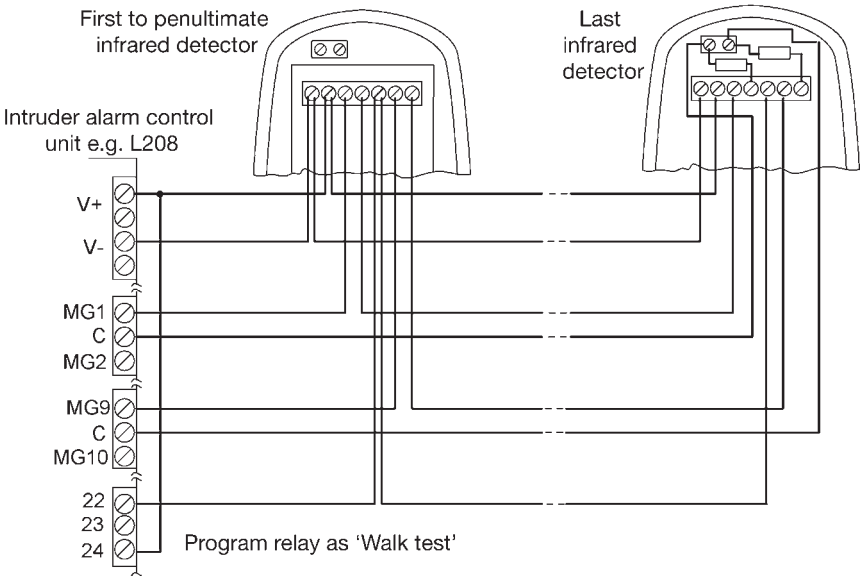
Connection example

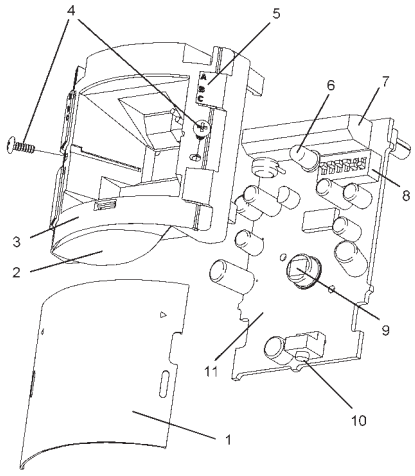


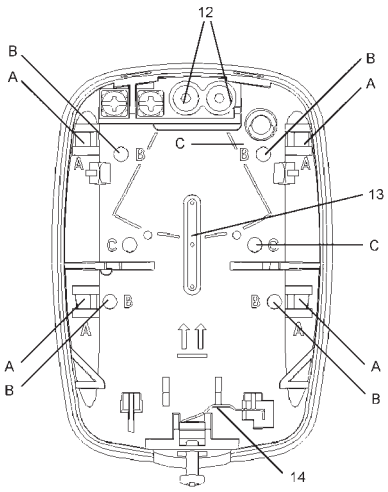
The terminating resistor (2.7 k ohm) must be looped into the last detector of a zone or sabotage zone. For a simpler installation, two free terminals are located on the housing of the detector.

Designation

1. Main lens
2. Anti-crawl-under lens
3. Lens module
4. Lens screws
5. Lens angle setting
6. Walk test LED
7. Terminal block
8. DIP switch
9. Infrared sensor (do not touch!)
10. Housing tamper contact
11. Printed circuit-board
12. Cable entry
13. Opening for mounting bracket MW
14. Tamper lever

Knockout openings for:
A – Corner mounting
B – Wall mounting
C – Wall mounting with mounting bracket MW





Preparation for installation

The passive infrared detector IR/B is suitable for use in a wide variety of ambient conditions.
The following guidelines must however be observed during the installation:

a) Due to the physical detection characteristics, the infrared detector can become insensitive at high ambient temperatures

b) Possible false alarms are caused by:
- direct sunlight
- high sources of heat in the detection area (e.g. wall heaters)
- draughts and air turbulence

c) Preparation and assembly:
- Loosen the screw on the lid and remove the front housing cover
- Hold the printed circuit-board at the terminal block and carefully pull it forwards out of the retaining clips
- The recommended mounting height is 2.3 m (if necessary, the detector can be mounted at another height and the lens adapted accordingly)
- Mount the detector on a solid and vibration-free surface
- Knock out the cable entry openings and the required mounting holes (A for corner mounting, B for wall mounting and C for mounting bracket MW) and fix the rear of the housing onto the wall (Note: In VdS installations, a mounting bracket may not be used). The knockout opening 'C' for the mounting bracket must be sealed again after the adjustment (e.g. with adhesive tape).

d) Cabling
- Lead the cable through the entry holes
- Hold the printed circuit-board at the terminal block, insert in the lower retaining clips and carefully latch into position
- Connect the cable to the terminal block according to the circuit diagram
- In VdS installations only one detector per zone may be connected
- Carry out the PIR sensitivity setting and PIR range setting
- DIP switches 5 and 6 must be set to OFF

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Pulse counter

In harsh environmental conditions, the possibility of false alarms can be further reduced by the activation of the pulse counter.
Note: In VdS installations, the 1- or 2- pulse mode must be activated.

– 2-pulse mode (DIP switch 2 at ON, and DIP switch 3 at OFF, factory setting, recommended setting):
The first signal only causes the LED to flash briefly (if this is activated, DIP switch 1 at ON or + 12 V at the test input).
A second signal within 24 seconds is necessary to trigger an alarm (VdS installations)
– 1-pulse mode (DIP switch 2 at OFF and DIP switch 3 at ON): An alarm is triggered after the first signal (VdS installations).
– 3-pulse mode (DIP switch 2 at ON and DIP switch 3 at ON): The first signal only causes the LED to flash briefly (if this is activated, DIP switch 1 at ON or + 12 V at the test input). Two further signals within 24 seconds are necessary to trigger an alarm.
– Long-range/curtain mode (DIP switch 2 at OFF and DIP switch 3 at OFF):
This setting must be selected if the infrared detector is used with the long-range or curtain lens.

PIR sensitivity setting

With DIP switch 4, the detection area can be set to 10 x 10 m or 15 x 15 m.
The infrared detector is set by default to a detection area of 15 x 15 m.
– DIP switch 4 ON: Detection area of 10 x 10m
– DIP switch 4 OFF: Detection area of 15 x 15 m

PIR range setting

Note: For signal processing, there is a short pause between the detection and the triggering of the alarm (less than 1 second).
In VdS installations, the walk test may only be controlled remotely and activated by applying + 12 V at the test input and DIP switch 1 must be set to OFF.

Conducting the range test:

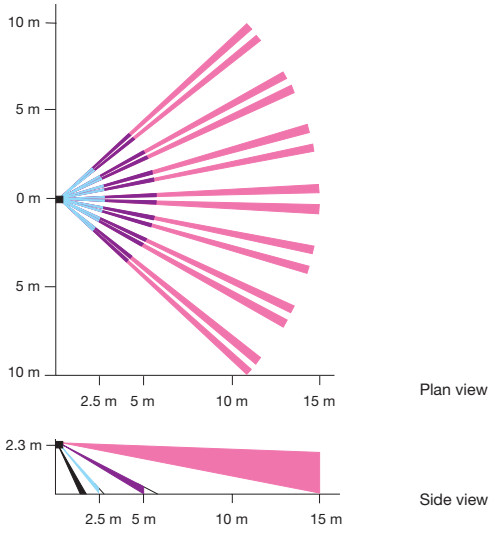
1. Connect the movement detector to the voltage (terminal 1: 0 V and terminal 2: + 12 V DC)
2. Activate the walk test: Set DIP switch 1 to ON (supplied state) or trigger the test input with + 12 V (e.g. via keypad of the intruder alarm control unit)
3. Range setting: A vertical adaptation of the detection area can be achieved by unscrewing the lens screw and adjusting the main lens according to the range indicator
   A Main area of the PIR is horizontal
   B Normal position for maximum range of 15 m at a mounting height of 2.3 m
   C Main area is approx 6 m at a mounting height of 2.3 m
   For corner mounting, the horizontal alignment can be adapted by unscrewing the wall mounting screws and the corresponding adjustment of the housing.
4. Tighten the lens and wall mounting screws.
5. Test whether all the alarms are displayed at the control unit
6. Reactivate the walk test and set DIP switch 1 to OFF
7. Clip on the housing cover and tighten the cover screw

IMPORTANT: The housing screw must be tightly screwed in place to ensure that the sabotage function operates without any problems.

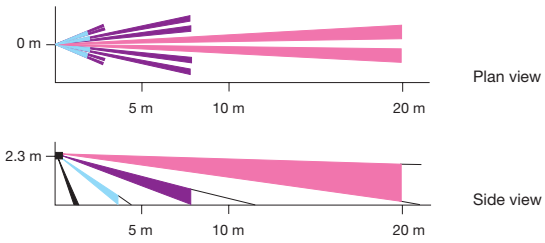
Effective ranges at a mounting height of 2.3 m

	Angle	Range	Zones/levels
Normal lens (IR/B) DIP switch 4 OFF	86°	15 m	18/4
Normal lens (IR/B) DIP switch 4 ON	86°	10 m	
Long-range lens (IR/BL)	7°	20 m	10/4
Curtain lens (IR/BV)	5°	10 m	1 rectangle

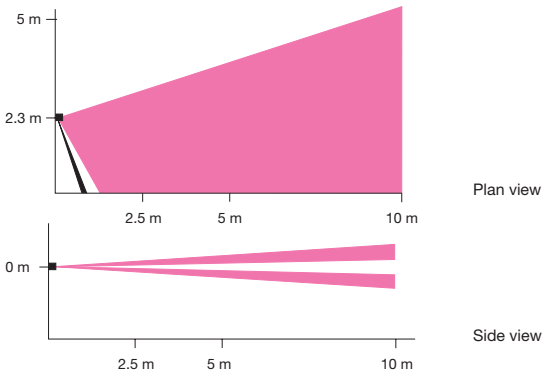
Normal lens (volumetric)



Long-range lens



Curtain lens



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Self-test

– Periodic self-test
The movement detector regularly carries out an internal electric self-test. If this indicates an error, the LED lights up weakly within approx. one hour. This state is reset either by an alarm (movement) or a successful self-test.
– Test of the supply voltage
The supply voltage is monitored continually. If it falls below 9 V, the LED flickers bright/weakly at 1 Hz.
The movement detector is ready for operation at a supply voltage greater than 9 V and the LED is extinguished.

LED display

Supply voltage is too low	LED flickers slowly (1 Hz) between bright and weak
Alarm (movement)	Lights up for 3 seconds if the LED is activated (DIP switch 1 at ON or + 12 V at test input)
Periodic self-test error	LED lights up weakly
Pulse counter detection	Brief flashing (50 ms) if LED is activated (DIP switch 1 at ON or + 12 V at test input)
No LED display	LED/Walk test not activated (DIP switch 1 at OFF or no + 12 V at test input)

Replacing the lens

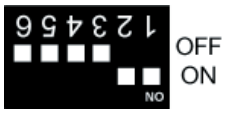
The lens should be replaced as follows:
– Completely remove the two lens screws to the left and right of the lens
– When using another lens, it should be ensured that the arrows of the range markings are located at the top
– The lens must first be latched into the two clamps on one side and then in the two clamps on the other side
– The adjustment of the normal lens is carried out according to the PIR range setting
– The long-range lens IR/BL and curtain lens IR/BV are adjusted in position B and DIP switch 2 and DIP switch 3 are set to OFF (long-range/curtain mode)
– Tighten the two lens screws again

Fault location

LED flickers weakly/brightly	Supply voltage less than 9 V
Bad detection	Check the lens setting
LED lights up weakly	Periodic self-test error

DIP switch position

The passive infrared detector is supplied with the following DIP switch position:
DIP switch 1 ON (LED/Walk test active)
DIP switch 2 ON and DIP switch 3 OFF (2-pulse mode)
DIP switch 4 OFF (area of detection 15 x 15 m)
DIP switch 5 and 6 OFF



Ordering information

Description	Ordering information Kurzbezeichnung	Order no.	bbn 40 16779 EAN	Price group	Unit weight in kg	Pack unit
Passive infrared detector VdS no.: G104 522	**IR/B**	2CDG 230 001 R0011	**64692 5**	50	0.1	1
Long-range lens set (5) VdS no.: G104 523	**IR/BL**	2CDG 230 003 R0011	**64694 9**	50	0.01	1
Curtain-lens set (5) VdS no.: G104 524	**IR/BV**	2CDG 230 002 R0011	**64693 2**	50	0.01	1
Mounting bracket	**MW**	GH V923 0039 V0020	**66580 6***	50	0.02	1

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