

1 | Overview

The ISC-SK10 is an advanced shock sensor designed to monitor doors, windows, safes, and ATM machines. The sensor detects mechanical attacks, such as blasting, hammering, drilling, and sawing.

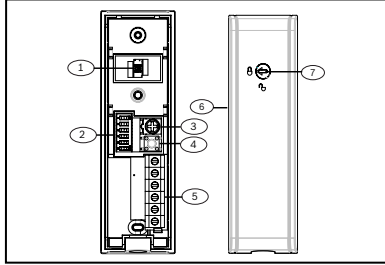


Figure 1.1: Sensor overview

Callout – Description
1 – LED
2 – DIP switches
3 – Sensitivity adjustment POT
4 – Tamper switch
5 – Terminal block
6 – Cover
7 – Unlock/lock switch

2 | Installation considerations

Install the ISC-SK10 on a door or window surface, inside a safe, or ATM. Mount the ISC-SK10 on a flat surface such as metal, glass, concrete, or wood surfaces.

When installing the sensor, use the included screws to secure the base to the desired surface, or use an adhesive AB glue if screws are not suitable. Do not use double-sided tape.

Avoid installing in locations where movement and other manual operations might generate false alarms due to vibrations or accidental contact.



NOTICE!
The ISC-SK10 is intended for indoor use only.

Maximum detection range

Use the different detection ranges that are suitable for the desired surface.

Applications	Radius (m)
Concrete	1.5
Brick wall	2.5
Steel	3
Wood	3.5
Glass	3.5

3 | Installation and configuration

3.1 | Hardware installation

Perform the following steps to install the hardware.

3.1.1 | Open cover

1. Insert a slotted screwdriver into the Unlock/lock switch and turn counter-clockwise 90° to unlock.
2. Pull apart the cover from the base.

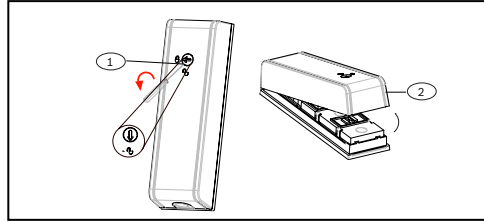


Figure 3.1: Opening cover

Callout – Description

- 1 – Unlocking the switch
- 2 – Pull apart base from cover

3.1.2 | Install base

1. Locate desired installation location.
2. Insert supplied screws (two ST2.9x13 mm) into screw slot locations (or use AB glue) to secure the base to the desired surface.

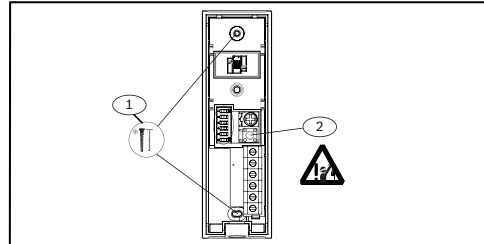


Figure 3.2: Screw locations

Callout – Description

- 1 – Screw locations
- 2 – Tamper

3.1.3 | Wiring

1. Insert wiring through the grommet.
2. Fasten wires to terminal block and secure with tie-wrap (included).

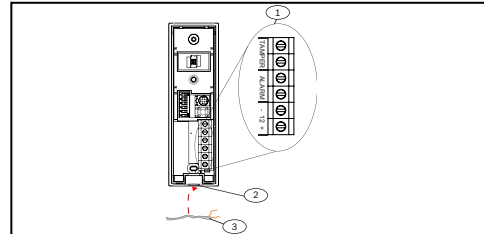


Figure 3.3: Mounting the module in the enclosure

Callout – Description

- 1 – Terminal block
- 2 – Grommet cut-out area
- 3 – Wiring

3.2 | Set DIP switches

Refer to Figure 3.4 for the DIP switch locations and settings.

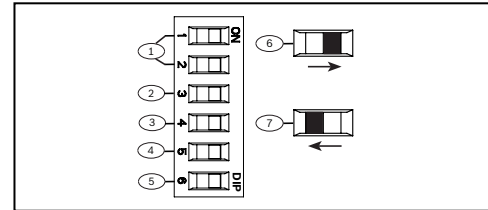


Figure 3.4: DIP switch settings

Callout – Description

- 1 – Sensitivity levels (#1 and #2)
- 2 – Pulse counting
- 3 – Drilling/saw detection (enable/disable)
- 4 – LED enable/disable
- 5 – Installation mode (this switch enables “Intelligent” mode)
- 6 – DIP switch positioning example: ON (open)
- 7 – DIP switch positioning example: OFF (closed)

3.2.1 | Sensitivity

1. Select the desired sensitivity level (1-4) using DIP switches #1 and #2. Refer to the table below for settings.

Level	DIP#1	DIP#2
High	ON	ON
High-middle	ON	OFF
Low-middle	OFF	ON
Low (default)	OFF	OFF

2. Fine-tune the sensitivity level by turning the POT adjustment clockwise to increase sensitivity, and counter-clockwise to decrease the sensitivity.

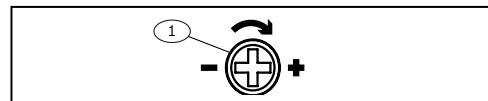


Figure 3.5: Fine sensitivity adjustment POT

Callout – Description

- 1 – Fine sensitivity adjustment POT

3.2.2 | Pulse counting

Select DIP #3 to set the pulse counting adjustment. The sensor generates an alarm when certain pulse countings are reached during the specified time.

DIP #3	Pulse counting time(s)
ON	4
OFF	1 (Default)

3.2.3 | Drilling/saw detection

Select DIP #4 to enable or disable the detection of drilling or sawing vibrations. Functionality occurs after sensor is powered up.

DIP #4	Drilling/saw detection
ON	Disable
OFF	Enabled (default)

3.2.4 | LED descriptions



NOTICE!
The LEDs must be enabled during installation.

DIP #5	LED function
ON	Enabled (default)
OFF	Disable

LED	Function
Green	Indicates an attempt attack was detected.
Red	Indicates an alarm was generated.
Red (ON steady)	Indicates there is a sensor fault.

3.3 | Installation mode

Select DIP #6 to choose between manual or intelligent mode.

DIP #6	Installation mode
ON	Intelligent
OFF	Manual (default)



NOTICE!
Enable the LED and cycle power on the system before applying the intelligent installation mode.



NOTICE!
Manual installation is active 20 min after powering up the system.

3.3.1 | Intelligent installation (recommended)

Perform the following to enable Intelligent Installation.

1. Power down the sensor and select intelligent installation (DIP#6 is set to ON).

DIP #1	DIP #2	DIP #3	DIP #4	DIP #5	DIP #6	POT
OFF	OFF	OFF	OFF	ON	ON	Random

2. Power up and wait for 2 sec. During this period, do not remove or disturb the sensor.
3. Use a suitable instrument to tap or bang within the detection range. During a 3 min duration, the sensor simulates, and records the maximum shock data. Installer simulates the typical noise to be ignored: printer, cash dispenser, bumps...etc.
4. After 3 mins, the red LED begins to flash quickly. Set the DIP#6 to OFF. The LED flashes slowly.
5. According to LED status, adjust sensitivity till LED turns OFF steadily.
 - LED slow flashing: according to LED slow flashing time(s), set DIP #1 and DIP#2 as stated in the table below. The LED either turns ON or OFF steadily. If ON steadily, tune the pot slowly till LED turns OFF steadily; if OFF steady, no adjustment is needed. (Slow flashing LED pattern: 0.5 second ON, 0.5 second OFF, repeat 1-4 times. Then the LED stays off for 2 seconds and restart slow flashing pattern.)

Red LED slow flashing	DIP #1	DIP #2
4 times	ON	ON
3 times	ON	OFF
2 times	OFF	ON
1 time	OFF	OFF

- LED ON Steadily: correct sensitivity level is selected, no need to set DIP #1 or DIP#2. But the POT is needed to be tuned till LED turns OFF steadily.
 - LED OFF Steadily: desired sensitivity is achieved.
6. Power up the system and wait for 2 sec. The sensor starts working.

3.3.2 | Manual installation (Intelligent Install mode disabled)

Perform the following to set the sensitivity manually.

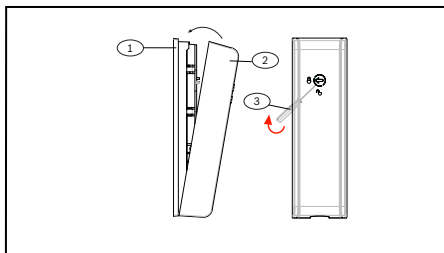
1. Power down the system and select manual installation (DIP#6 is OFF). Select any one of the 4 sensitivity levels and adjust the sensitivity to desired as steps 2-6. Default is low level, 1 pulse, drilling/saw detection enabled and LED enabled as stated in the table below.

DIP #1	DIP #2	DIP #3	DIP #4	DIP #5	DIP #6	POT
OFF	OFF	OFF	OFF	ON	OFF	Intermediate

2. Power up and wait for 2 seconds. During this period, the sensor shall not be removed or disturbed.
3. Use a suitable instrument to tap or bang within the detection range. Observe the LED response.
4. If needed, tune the POT slowly with the screwdriver based on the LED response observed in Step 3.
5. Repeat steps 3 and 4 until the desired sensitivity is achieved.
6. Power up again and wait for 2 sec. The sensor starts working.

3.4 | Close the cover

1. Slip the cover into the base slots and close the cover.
2. Turn the slotted screwdriver clockwise 90° to lock in place.



Callout – Description

1 – Sensor base
2 – Sensor cover
3 – Slotted screwdriver (turning clockwise)

Figure 3.6: Closing the cover

4 | Specifications

Dimensions	100 mm x 30 mm x 20 mm (3.93 in x 1.18 in x 0.78 in)
Voltage (operating)	9-15 VDC, 12 V nominal
Current (maximum)	8.5 mA (Standby), 12 mA (Alarm)
Alarm output	NC relay output, 100 mA/30 VDC
Tamper switch	NC 50 mA/30 VDC
Sensitivity settings	4 adjustment levels
Operating temperature	+14°F to +131°F (-10°C to +55°C)
Relative humidity	0% to 95% non-condensing
Enclosure protection	IP43
Detection method	Digital, triaxial acceleration sensor



Shock Sensor

ISC-SK10



en Installation Guide

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