BOSCH

ISN-SMS-W7 SensTool

Operating Instructions

Version: 1.1.6

A6V10245824_d

Bosch Security Systems, Inc.

Copyright

Technical specifications and availability subject to change without notice.

© Bosch Security Systems, Inc. 2016.

Table of Contents

1 Trademark Acknowledgement

All products or company names referred to explicitly in this manual are mentioned only for purposes of identification or description and may be trademarks or registered trademarks of their respective owners.

Microsoft is a registered trademark and Windows a trademark of Microsoft Corporation.

2 General

These instructions detail how to use the software for SensTool. It is assumed that the user is familiar with the use of the ISN-SM-xx range of seismic detectors.
The screenshots shown are examples and may deviate from what is displayed by your software.

2.1 Description

SensTool is a PC based software program offering the following functions for the seismic detector types ISN-SM-50, ISN-SM-80, and ISN-SM-90:

- Setting the operating parameters.
- Guidance on the permitted detector settings.
- Analysis of the detector data.
- Display of event data from seismic detectors.
- Upload and download of detector data via RS232 port and associated PC lead.
- Storage and display of seismic configuration data, signal data and historical event data.

2.2 Scope of Supply

The ISN-SMS-W7 SensTool consists of:

- 1 x RS232 connection cable for connecting a seismic detector to a serial port on a PC.
- 1 x CD ISN-SMS-W7 SensTool with the latest version of SensTool and the operating instructions in PDF format.

2.3 System Requirements

In order to use the SensTool software, your PC must feature the following:

- X86 processor with at least 166MHz and 40MB RAM.
- CD drive.
- RS232 or USB port with converter to RS232 (the converter is not included in the scope of supply).
- At least 100MB of free memory space on the hard disk.
- Operating system: XP / VISTA / Windows 7 / Windows 8.

3   Installation

3.1   SensTool Software Installation

> ℹ️ The SensTool software must not be disseminated to third parties or sold.

If SensTool is already installed on the PC, open the program and the version number displays in the header bar.

If you have an older version of the SensTool software (< V1.1.6) it is possible that not all current detector types will be detected. Bosch strongly recommends that you install the current version of the SensTool software.

Install the software as follows:

- Close all applications on the PC.
- Insert installation CD.
  The installation program launches automatically

  > ℹ️ If the SensTool installation program does not launch automatically, start the **ISN-SMS-W7-x.x.x_installer.exe** program manually from Windows Explorer.

- Follow the installation program instructions.

3.2   Hardware Installation

Connect the seismic detector to the PC using the serial connection cable as follows:

- Open the seismic detector (refer to ISN-SM-xx installation sheet for additional information).
- Use a free RS232 connection (COM port) on the PC to connect to the seismic detector via a connection cable.

  > ℹ️ If the chosen COM port is already being used by another application, close the application.
  >
  > If no COM port is available on the PC, it is possible to connect through a USB port on the PC using a USB to RS232 converter (not supplied).

- Connect the supply voltage on the seismic detector and wait 30 seconds for the detector to calibrate.

4 Program Application

4.1 Starting SensTool

Proceed as follows to start the SensTool software:

- Start the SensTool software using **Start > All Programs > ISN-SMS-W7 > ISN-SMS-W7** or double-click on the desk top icon.

- Select the language from the drop-down list. Language options are English, German, French, Italian, Spanish, Dutch, Swedish, Polish, and Portuguese.
- Select the connection port from the drop-down list.

| ℹ | The **No detector connected** setting is used to preconfigure settings if the connection to a detector is unavailable or to evaluate saved data. |

- Click **OK** to confirm the entries and pass to the main menu or click **Exit** to close the program.

| ℹ | The evaluation of saved configuration data can only be viewed in the **Settings** tab and by opening a currently saved .ISN-SMS-W7 file |

4.2 Main screen
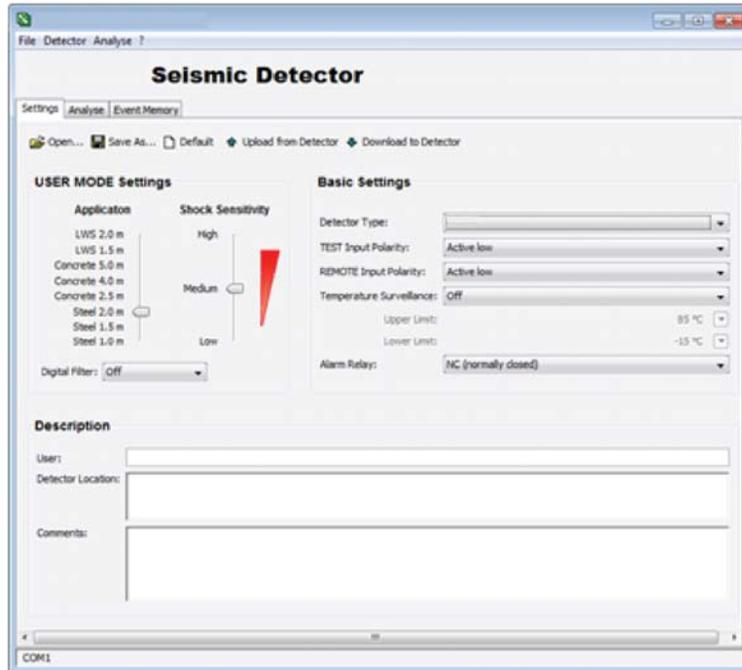
4.2.1 Tabs

Select a tab on the main screen to display the **Settings**, **Analyse**, and **Event Memory** functional areas.

- **Settings**
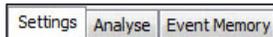
Select the **Settings** tab to configure and select the seismic detector type, to transfer data to and from the detector and to save and retrieve the detector settings.

- **Analyse**

Select the **Analyse** tab to review real time signal test data and to save and retrieve signal data.

- **Event Memory**
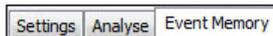
Select the **Event Memory** tab to retrieve the event log from the detector and to save the retrieved events to the PC.

SensTool Operating Instructions

4.2.2 Footer

COM1 Ready	Current Settings: USER MODE, Application: Concrete 4.0 m, Shock Sensitivity: High, Digital Filter:Off

The footer displays the following information:

Left side	Connection between detector and PC.
Right side	Settings data for the connected detector, when uploaded.

4.3 Settings tab

4.3.1 Command bar

To enable the command bar options in the **Settings** tab, first select a detector from the **Detector Type** drop-down list in the **Basic Settings** area.

Settings	Analyse	Event Memory
Open...	Save As...	Default	Upload from Detector	Download to Detector

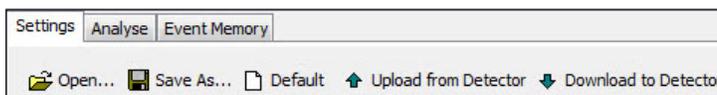When a detector is selected, the following options are available:

Open...	Open a previously saved configuration file. The configuration file can contain the detector settings, detector type and the description text.
Save As...	Save the current settings to a configuration file on the PC including the detector settings, the detector type and the description text.
Default	Restore the factory settings for the connected detector type. See **Table 1 - Default settings for detectors** for more information on the factory settings for detectors.
Upload from Detector	Receive and display the current settings from the connected detector.
Download to Detector	Transmit the current settings from SensTool to the connected detector.

4.3.2 Table 1 - Default settings for detectors

Detector	Application / radius	Shock Sensitivity	Test I/P	Remote I/P	Temperature surveillance	Alarm Relay	Digital Filter
ISN-SM-50	Steel 2.0m	Medium	Active low	Active low	Off	Normally closed	Off
ISN-SM-80	Concrete 4.0m	High	Active low	Active low	Off	Normally closed	Off
ISN-SM-90	Concrete 4.0m	High	Active low	Active low	Off	Normally closed	Off

SensTool Operating Instructions

4.3.3   Program multiple detectors

To configure multiple detectors for one application, save the settings for a
single detector to a configuration file. The saved configuration file can then
be opened and downloaded to multiple detectors at any time.

> ℹ️ During the data transfer, the cable connection to the detector and
> the detectors supply voltage must not be interrupted.

4.3.4   Basic Settings

> ℹ️ The selected configuration on SensTool overrides any DIP switch
> settings on the detector.
> Refer to the ISN-SM-xx Install sheets for details of local approval
> body requirements.

Basic Settings

Detector Type:	⌄
TEST Input Polarity:	Active low ⌄
REMOTE Input Polarity:	Active low ⌄
Temperature Surveillance:	Off ⌄
Upper Limit:	85 ℃ ⌄
Lower Limit:	-15 ℃ ⌄
Alarm Relay:	NC (normally closed) ⌄

Select the following settings for the connected detector:

Detector Type:	Select the connected detector type: • **ISN-SM-50** • **ISN-SM-80** • **ISN-SM-90** The default setting is option 1, no selection.
TEST Input Polarity:	• **Active low** • **Active high** The default setting is **Active low** ℹ️ **Active low** = 0 V applied to activate **Active high** = 0 V removed to activate

REMOTE Input Polarity:	• **Active low**
	  0 V applied
	• **Active high**
	  0 V removed
	The default setting is **Active low**
	
	ℹ️ **Active low** = 0 V applied to activate
	Active high = 0 V removed to activate

Temperature Surveillance:	• **Off** • **On** The default setting is **Off.** See **Table 2 - Temperature Surveillance** for more information on the range of temperature surveillance that is configurable for each detector type
Alarm Relay:	• **NC (normally closed)** • **NO (normally open)** The default setting is **NC (normally closed)**.

4.3.5   Table 2 - Temperature Surveillance

Detector Type	Lower Limit	Upper Limit	Default Lower Limit	Default Upper Limit
ISN-SM-50	Fixed	Fixed	N/A	N/A
ISN-SM-80	-40 °C to 0 °C**	+85 °C to +20 °C **	-15 °C	+85 °C
ISN-SM-90	-40 °C to 0 °C**	+85 to +20 °C **	-15 °C	+85 °C

**Temperature must be specified in units of 1 degree.

4.3.6   USER MODE Settings
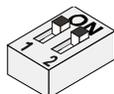
  USER MODE	**USER MODE** is the facility to overwrite the limited programmability via the DIP switch settings on the detector. To activate the **USER MODE Settings**, set the DIP switches 1 and 2 on the detector to **ON** The recommended settings for each detector and the application can be found in the ISN-SM-xx Install sheets.

Enter the following values in the **USER MODE Settings** area:

Application	Select the material type that the detector is mounted on and the required detection radius. (LWS for light-weight steel).
Shock Sensitivity	Select the detectors responsiveness to impacts on the detector or the surface it is mounted on.
Digital Filter	These options assist with the filtering of noise, which may create unwanted alarms. **Fluorescent Lights** – this option will reduce potential interference from local light fittings within the protected space. **Mechanical Noise** – this option will reduce potential interference from mechanically generated noise such as clocks, air-conditioning units, motors, power supplies, traffic and other internal or external sources.

Refer to Table 1 - Default settings for detectors for information on the default settings.

4.3.7 Description

The Description area contains 3 free-text areas for recording important site data. Click **Save As...** to save description information with the current data relating to the detector settings. Description information is only saved in the configuration file, not in the detector.

Example:

User:	Engineer's name and contact details
Detector Location:	ISN-SM-90 located on the door of the main safe and has a ISN-GMX-P3S as part of the installation
Comments:	This door can only be opened during banking hours and the manager and the assistant manager are the designated key holders. The high sensitivity setting is to provide increased protection to the door.

4.4 Analyse tab
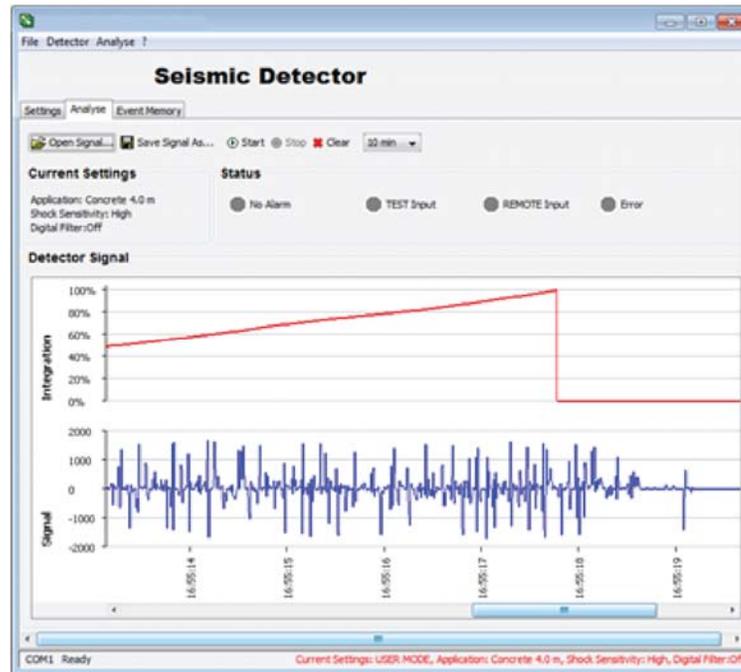
The **Analyse** menu can be used to perform the following actions:

- Open saved signals from the PC.
- Save captured signals to the PC.
- View real time signals.
- Record real time signals.
- Delete recorded signals.

4.4.1 Command bar
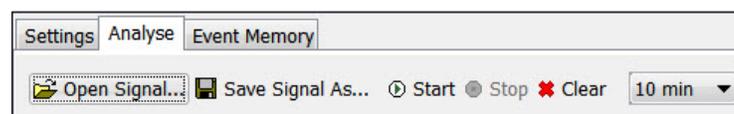
Select an option in the **Analyse** command bar to review real time signal test data and to save and retrieve signal data.

Open Signal...	Retrieve and open saved signals from the PC (.txt format file) and depict them graphically.
Save Signal As...	Save the signals currently displayed in the selected directory of the PC in a .txt format file.
Start	Start recording signal after a 5 second delay.

⊙ Stop	Stop recording signal.
✖ Clear	Delete the current recording.
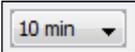
10 min ▼	Selects a recording time period from the drop-down options.
	• 10 min
	  Samples the signal and records every 1 second for a 10 minute period.
	• 100 min
	  Samples the signal and records every 5 seconds for a 100 minute period.
	• 18 h
	  Samples the signal and records every 30 seconds for an 18 hour period.

4.4.2 Current Settings

Current Settings

Application: Concrete 4.0 m
Shock Sensitivity: High
Digital Filter:Off
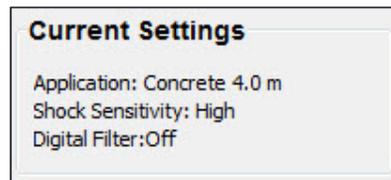
The current settings are also shown in the footer.

4.4.3 Status

Status

● No Alarm   ● TEST Input   ● REMOTE Input   ● Error

The status section is dormant with all status indicators showing grey until a recording starts.

During a recording a change in status is indicated as follows:

Alarm status

Status	Colour change
No Alarm	Changes from grey to dark red during recording.
Alarm * **(Integration)**	Changes from dark red to bright red when an integration alarm is detected.
Alarm **(Shock)**	Changes from dark red to bright red when a shock alarm is detected.
Alarm * **(Temperature)**	Changes from dark red to bright red when a temperature alarm is detected.
Alarm * **(Drill)**	Changes from dark red to bright red when the anti-drilling foil is disconnected/damaged. The alarm remains until the anti-drilling foil is replaced or linked out.

*Alarm signals cycle 2.5 sec on/off for the duration of the alarm input being present.

TEST status

Status	Colour change
TEST Input	Changes from dark green to bright green when the test input has been activated.

REMOTE status

Status	Colour change
REMOTE Input	Changes from dark green to bright green when the remote input has been activated.

Error status

Status	Colour change
Error	Changes from grey to bright red when the detector receives invalid data. The data needs to be resent to the detector.

4.4.4   Detector Signal
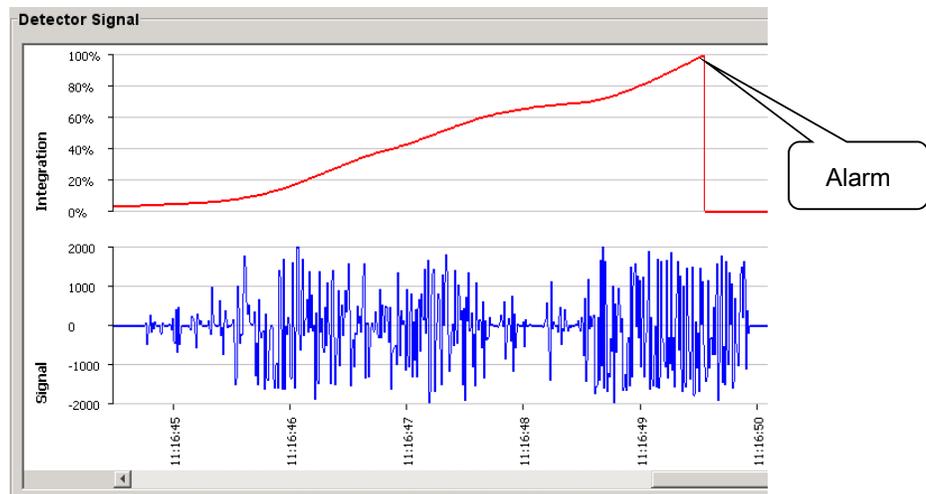
The detector signal recording is shown in blue in the bottom section of the screen. The time stamp is linked to the PC's clock and is implemented when the recording starts. The signal strength automatically adjusts to the strength of the signal being detected, in a range of 0 to +/- 2000.

If the detector signals fulfil the requirements of an alarm, these signals are integrated and shown in red in the top section of the screen. If integration reaches 100%, an alarm is activated.

4.5   Event Memory tab

ℹ️ Event memory must be uploaded from the detector. For more information, see
Event Memory Upload.

The following are considered detector events:

- Restart of detector after an interruption to the supply voltage.
- Alarm activation.

Detector events can be uploaded from the following detectors:

- ISN-SM-80
- ISN-SM-90

SensTool can retrieve the event memory from the detectors, save the data as a report (.txt format), and delete the event memory in the detector.

> **i** The time displayed, without a date, may vary by ± 10 minutes a day. This time is from the real time clock in the detector. Times that are displayed with a date are taken from the clock in the PC.

The detector is equipped with a time measuring function which starts to run when the supply voltage is applied. The time is saved for every event. If the supply voltage is switched off (interrupted), the time measurement automatically restarts when the supply voltage is restored.

SensTool can read the events from the detector with the time measurement and calculate the time and date for the current period. The calculation is based on the time/date from the clock in the PC.

Earlier events are shown with the time relative to the corresponding restart (reset).

Resetting of the supply voltage

Time of alarm after resetting the detector

Connected to the PC

Date and time re-calculated

Date	Time	Event
IReset	00:00	Reset
Reset	00:00	Reset
Reset	00:00	Reset
Reset + 0 days	01:26	Integration Alarm
Reset + 0 days	01:27	Integration Alarm
2015-07-16	03:29	Integration Alarm
2015-07-16	03:30	Integration Alarm
2015-07-16	05:00	Integration Alarm
2015-07-16	07:09	Integration Alarm
2015-07-20	06:13	Integration Alarm
2015-07-21	03:06	Integration Alarm
2015-07-21	03:07	Integration Alarm
2015-07-21	05:47	TEST active | Integration Alarm
2015-07-27	02:59	Integration Alarm

Save As Report...   Event Memory Upload   Clear Event Memory in Detector

4.5.1 Save As Report ...
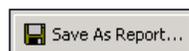
Save the current report as a .txt format file in the selected directory of the PC.

SensTool Operating Instructions   F.01U.326.911-01

07.2016

4.5.2 Event Memory Upload

Copy events from the detector to SensTool and display.

4.5.3 Clear Event Memory in Detector

Delete event data in the detector. Detector settings are retained within the detector.

4.5.4 Display of dates, times and events

- **Date**
  The **Date** column displays the calendar date calculated with year, month and day (e.g. 2015-01-22) or the days after a restart (e.g. Reset +0 days)

- **Time**
  The **Time** column displays the time in hours and minutes.

- **Event**
  The Event column displays the type of events. Several events may occur at the same time.

Event	Meaning
Reset:	Restart of detector after an interruption to the supply voltage.
Integration alarm:	Alarm activated due to a series of vibrations.
Temperature alarm:	Alarm activated due to the set temperature limits being exceeded. For more information, see **Table 2 - Temperature Surveillance**.
Drill alarm:	Alarm activated due to the anti-drilling foil being drilled or cut through.
Shock alarm:	Alarm activated due to impact.
TEST active:	TEST input activated.*****
REMOTE active:	REMOTE input activated.******

*The alarm is only recorded if the alarm is activated while the input is active.

Activation of the ISN-GMX-S1 test transmitter displays in the Status area of the Analyse tab as **Alarm (Integration) and **TEST input.** For more information, see Section 4.4.3, **Status**.

5 Recommended settings

The following settings are recommended for standard applications.

5.1 Basic Settings

- Alarm relay set to NC (normally closed).
- Temperature Surveillance set to Off.

If the temperature is to be monitored, it should be set to around 10 degrees Celsius above or below the expected operating temperature range of the detector.

5.2 Table 3 – USER MODE Settings

- Digital Filter set to **Off**

Construction	Impact sensitivity	Application
Steel 1.0m	Low	Ticket machine with loud function-related noises.
Steel 1.5m	Medium	ATM, day/night vaults, safes with loud function-related noises.
Steel 2.0m	Medium	Encased safe, vault doors with function-related noises.
Concrete 2.5m	High	Vault room, element vault with some interfering influences.
Concrete 4.0m	High	Vault room, element vault with low interfering influences.
Concrete 5.0m	High	Vault room, element vault with minimal interfering influences.
LWS 1.5m	High	ATM made of plastic plating system with function related noises.
LWS 2.0m	High	Element vault made from plastic plating system with minimal noises.

SensTool Operating Instructions

6 Troubleshooting

Problem	Diagnosis	Solution
PC cannot communicate with the detector.	Ensure that the COM port on the PC is free for use.	Check that the correct COM port is selected, usually COM1.
	Close all open applications that could claim the port.	
	Ensure the connection cable is plugged into the serial port on the PC and into the detector.	
	Ensure the detector has power.	Check using a multimeter, also check for polarity.
	Ensure that DIP switches 1 and 2 are in the ON position to establish comm's.	
	Ensure that a detector type has been selected and it is the correct type.	
	Ensure that the compatible version of SensTool is being used.	
	Ensure the correct driver software is installed on the PC, if a USB/Serial adapter is used.	
Detector is showing Drill Alarm	Ensure the ISN-GMX-D7 anti-drilling foil is connected correctly.	Connected into header marked **ISN-GMX-D7**, refer to detector Install sheet.
	Ensure that the ISN-GMX-D7 is not open circuit.	Check using a multimeter for continuity (around 300Ω resistance for ISN-GMX-D7).
Integration Alarm present	Ensure that the ISN-GMX-S1 test transmitter is not activated from an external source.	Check terminal 4 on the detector with a multimeter. Refer to the Install sheet for the detector.

SensTool Operating Instructions F.01U.326.911-01
07.2016

Problem	Diagnosis	Solution
	Use the Analyse option to view and record the noise.	Refer to **Table 1 - Default settings for detectors**. Ensure that the 0 V applied or removed is correct for the detector configuration. Refer to section 4.2.3. Use the digital filter options to remove the noise as required.
Shock Alarm present	View the shock alarm using the Analyse option in SensTool.	Change shock settings to reduce noise. Change the detection radius, if permissible, to remove the noise. Use the digital filter options to remove the noise. Identify the source and take appropriate action to prevent.
Temperature Alarm present	Check the high and low settings of the detectors. Check ambient temperature of the local area.	Use SensTool and adjust if required. Refer to **Table 2 - Temperature Surveillance** for input options.
Detector slow to respond	Check if the remote input is active, which will reduce the sensitivity to 12.5%.	Check input 7 on the detector using a multimeter. Refer to the Install sheet for the detector.
Unwanted activations	Check the settings of the detector. Repeat the processes above for the removal of the different types of alarm.	Verify against the original settings, if available.

7   Ordering information

Item	Order number
SensTool PC Software	F.01U.004.306

SensTool Operating Instructions   F.01U.326.911-01
                                                                                                                07.2016