SECURITY - IT’S IN OUR DNA

Security is evolving. Vanderbilt strives to discover new ways to address physical threats and changing circumstances; demographic movement, urbanisation, global warming, and resource shortages.

Efficiency is critical, but cannot come at the cost of security for personnel, property or assets. In addition, we need to be mindful of the effects our products and their development have on the environment.

For our customers, success is defined by how well we manage these challenges.

Make Vanderbilt your preferred partner for energy-efficient, safe, and secure buildings and infrastructure.
Tailored security and optimal damage limitation for every application

- **Seismic detectors – for optimal structural damage limitation**
  Seismic detectors are typically used in applications where cash or valuables are stored in specialized repositories that are costly to repair or replace, such as ticketing machines, ATMs, safes, or lightweight and armoured vaults. The tools used to break into repositories, such as drills, flame cutters or even explosives, can cause a lot of structural damage in a very short time. Seismic detectors from Vanderbilt are capable of detecting non-routine structure-borne vibrations caused by even the subtlest of attacks (e.g. with thermal cutting tools) very early on. This performance reduces the intervention time and the risk of serious structural damage.

- **Reliable detection of thermal and mechanical attacks**
  Vanderbilt has been setting the standard in seismic detection for decades. Depending on the application, the seismic detector can be installed inside a wall, ceiling or floor, or surface-mounted e.g. to the door of a safe. The patented Senstec sensor, combined with advanced digital signal processing, evaluates selected frequency bands to ensure reliable and immediate detection of all known mechanical and thermal attacks. The alarm is repeatedly triggered for the whole duration of the attack, to allow a timely intervention and to minimise structural damage to the walls or safe. All the detectors are tamper-proof.

- **Outstanding false alarm immunity**
  A specially developed and patented piezo-ceramic element is used to convert mechanical and thermal vibrations into electrical signals. The frequency of these signals is then measured and checked against that of known attacks, to decide whether to alarm or not. As a result, routine “noises” such as traffic or electro-magnetic interferences, causing structure-borne sounds to be propagated through the protected structure, will not cause false alarms.

- **Adjustable sensitivity**
  All Vanderbilt seismic detectors have a multi-level sensitivity adjustment. This ensures that the detectors’ settings can be easily fine-tuned to the environmental conditions.

- **Fast and flexible installation**
  Pre-programmed settings make for a plug & play installation in standard "seismic" applications, whilst the optional SensTool software enables the default operating parameters to be customised to fit more specific applications or environments. An external test transmitter is also available for the testing of the detectors during installation, and throughout the operating life of the detectors. The slim-line housing of the seismic detectors and versatile mounting options enable them to be easily installed, even when space is restricted.

The combination of advanced digital signal processing and the Senstec™ bimorph sensor technology enables any mechanical or thermal attack to be immediately detected. The alarm is triggered repeatedly during the attack, giving ample time for intervention before the intruder has managed to gain access to the valuables or serious structural damage occurs. This technology also ensures that environmental disturbances are ignored, and false alarms eliminated.

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**Highlights**

- Reliable detection of thermal and mechanical attacks
- Optimal structural damage limitation
- High immunity to false alarms
- Adjustable, application-specific sensitivity
- Fast and flexible installation
- 24-hour monitoring

Seismic detectors for all applications: from ATMs, ticketing machines to strong rooms.
A full range of seismic detectors

The GM710 seismic detector offers standard functionality. It is designed for applications on steel (ticket/vending machines, safes, etc.) for cost-sensitive applications.

The GM730 seismic detector
The GM730 is suited for applications involving high-value or high-risk items. It is designed for applications with high performance, quality and reliability. The detector is optimised for use on steel and concrete, but also on lightweight synthetic materials. The GM730 is well suited for almost any application, including modular vaults, vaults with lightweight construction, ATMs armoured with synthetic material and night depositories.

The GM760 seismic detector
The GM760 is the all-purpose unit in the Seismic detectors range. It is suited for applications on both steel and concrete. It is well suited for additional applications such as vaults, automated teller machines armoured with synthetic material, night depositories and vaults with lightweight construction.

The GM775 seismic detector
The GM775 is the right choice for high risk security applications. Comprehensive features combine to deliver high performance, quality and reliability. The detector is optimised for use on steel and concrete, but also on lightweight synthetic materials. The GM775 is well suited for almost any application, including modular vaults, vaults with lightweight construction, ATMs armoured with synthetic material and night depositories.

The GM780LSN seismic detector
The GM780 is a watertight seismic detector residing on the LSN bus with active optical cover monitoring. It is ideal for 24-hour monitoring of vault rooms and doors, containers or gates, which are located in harsh environments.

The GM780LSN seismic detector
The GM780LSN is the right choice for high risk security applications. Comprehensive features combine to deliver high performance, quality and reliability. The detector is optimised for use on steel and concrete, but also on lightweight synthetic materials. The GM780LSN is suited for applications involving high-value or high-risk items. It is designed for applications with high performance, quality and reliability. The detector is optimised for use on steel and concrete, but also on lightweight synthetic materials.

The GM775LSNi seismic detector
This detector resides on the LSN bus providing 24-hour protection for vaults, automated teller machines, cash registers, armoured cabinets, vaults with lightweight construction and modular vaults.

The GM780LSNi seismic detector
This detector resides on the LSN bus providing 24-hour protection for vaults, automated teller machines, cash registers, armoured cabinets, vaults with lightweight construction and modular vaults.

The range of tools available to potential thieves is wide and constantly expanding. From basic tools like hammers, chisels or drills to more sophisticated ones, including cutting torches, hydraulic presses or laser tools.

Timing, frequency and amplitude – all a sensor needs
Each attack tool produces specific mechanical vibrations, giving it a unique acoustic "fingerprint". The timing, frequency and amplitude of these acoustic fingerprints are used to build "typical threat profiles". When noise or vibrations are detected by the detector's bimorph sensor, their characteristic values are precisely analysed.

The patented bimorph sensor incorporates unique, single-sided mounting of the piezo element. This design enhances the detection sensitivity and precision to a level found in no other seismic detector. The bimorph sensor even detects the use of thermal tools such as oxygen lances, which are normally more challenging than mechanical tools for standard seismic detection technologies. Whatever the intensity of the attack, the seismic detectors will detect and trigger an alarm immediately.

Sensitivity is key
The range of tools available to potential thieves is wide and constantly expanding. From basic tools like hammers, chisels or drills to more sophisticated ones, including cutting torches, hydraulic presses or laser tools.

Immune to environmental disturbances
The signal analysis works within a very narrow frequency bandwidth, which makes it insensitive to routine noises or vibrations (e.g. passing traffic).

Patented bimorph sensor
The patented bimorph sensor incorporates unique, single-sided mounting of the piezo element. This design enhances the detection sensitivity and precision to a level found in no other seismic detector.

SensTool configuration software
The SensTool software is used to program the seismic detectors before the installation or on site, and displays the detectors' event memory. The pre-programmed threat profiles can be modified to fit the environmental noises.

Patented Senstec technology
The unique and highly sensitive bimorph sensor detects all attack types, including thermal

Digital signal processing with algorithms for typical threat profiles

Numerous options for manual and automatic testing

Sophisticated digital signal processing

Digital signal processing with algorithms for typical threat profiles

Patented Senstec technology
The unique and highly sensitive bimorph sensor detects all attack types, including thermal

Digital signal processing with algorithms for typical threat profiles

Numerous options for manual and automatic testing

Highlights

GM710 with standard functionality for cost sensitive applications on steel
GM730 with advanced functionality and outstanding price/performance ratio for applications on steel
GM760 for high risk applications on steel, concrete and lightweight synthetic material
GM775 for high risk applications on steel, concrete and lightweight synthetic material with electronic output for GMYA7
GM775LSNi with field bus connectivity for applications within enhanced Local Security Networks (LSN)
GM780LSN with field bus connectivity for applications within Local Security Networks (LSN)
### Technical Overview

<table>
<thead>
<tr>
<th>Material/Applications</th>
<th>GM710</th>
<th>GM720</th>
<th>GM760</th>
<th>GM775</th>
<th>GM775LSNi</th>
<th>GM780LSN</th>
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<tr>
<td>Steel (vaults, ATM, night depositories)</td>
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<td>Synthetic material (lightweight vaults, ATM's armored with synthetic materials)</td>
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| Detection range                                   |       |       |       |       |           |          |
| Operating range on concrete (up to)               | 2 m   | 4 m   | 5 m   | 5 m   | 4 m       | 4 m      |
| Covered area (up to)                              | 12 m² | 50 m² | 80 m² | 80 m² | 50 m²     | 50 m²    |

| Features                                          |       |       |       |       |           |          |
| Remote sensitivity                                | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| Sensitivity adjustment                            | 4 levels fixed | 5 levels (3 fixed) | 7 levels (3 fixed) | 7 levels (3 fixed) | 6 levels via LSN | 6 levels via LSN |
| Tamper protections                                | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| Low/high-temperature monitoring                   | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |

| Event memory                                      | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |

| Technical specifications                          |       |       |       |       |           |          |
| Supply voltage                                    | 8–16V | 8–16V | 8–16V | 8–16V | max. 33V (LSN) | max. 33V (LSN) |
| Current consumption                               | 3mA   | 3mA   | 3mA   | 3mA   | 3mA       | 1.4mA    |
| Operating temperature                             | –40 to +70 °C | –40 to +70 °C | –40 to +70 °C | –40 to +70 °C | –20 to +70 °C | –25 to +70 °C |
| Housing protection                                | IP43  | IP43  | IP43  | IP43  | IP43      | IP67     |

| Approvals                                         |       |       |       |       |           |          |
| VDE - GERMANY                                     | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| VSD - AUSTRIA                                     | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| IMQ - ITALY                                       | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| CNPP - FRANCE                                     | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| INCERT - BELGIUM                                  | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| SBSG - SWEDEN                                     | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| PIE - POLAND                                      | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| UL - US & CANADA                                  | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| CCC - CHINA                                       | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| RCM - AUSTRALIA                                   | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| REQ - THE NETHERLANDS                             | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| FAP - DENMARK                                     | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| MABBSZ - HUNGARY                                  | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| PD6662 - UK                                       | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| FG - FINLAND                                      | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| NSB - CZECH                                       | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |
| BSI - UK                                          | ☐     | ☐     | ☐     | ☐     | ☐         | ☐        |

### Test & Verification

**Internal test transmitter**

The GMX51 remote test transmitter is installed in direct proximity to the detector and used for function and mounting test of a single seismic detector prior to system arming.

**External test transmitter**

The GMXX5 external test transmitter is used to fully test and evaluate an installation with multiple detectors by simulating attack signals. It is mounted separately from the seismic detector onto the monitored object. If the seismic detectors are installed at the correct spacing and setting, the test signal is detected and an alarm is triggered. Therefore, the complete installation can be verified.

**Test & Indication system**

The GMYA7-AS remote test system consists of a key module and a single indicator module. It enables daily routine function tests to be conducted on up to 8 seismic detectors independently of an intruder alarm system. The GMYA-AS can only be used with the seismic detector GM775 and in combination with the GMX51.

### Accessories

**Housing & Enclosures**

Two types of housings are available to protect the detector from damage:

- **GMX51**
- **GMX55**
- **GMX7**
- **GMXW0**
- **GMXX7**
- **GMX9B**

**Mounting & Installation**

- **Mounting plate**
  - The GMX60 mounting plate helps to ensure easy installation and reliable detection performance. Vanderbilt strongly recommends the use of a mounting plate with every Senstec seismic detector. The use of a universal mounting plate is mandatory for installation on uneven steel surfaces and on concrete applications. The mounting plate may be either fixed with a screw or tack welded for mounting to steel surfaces.

- **Connection sleeve**
  - The GMX21 is a 16mm diameter conduit connection sleeve, which ensures a fixed and secure connection and protects the cable exit of the Senstec seismic detectors.

- **Lock protection**
  - The GMXF5 / GMP3Z lock protection is used in conjunction with a GM7xx seismic detector to monitor safe and strong room doors with exposed keyholes. A micro-switch fitted in the swivel plate monitors every movement of the swivel arm and triggers an alarm when unauthorized access is attempted.

- **Movable mounting kit**
  - The GMAS6 movable mounting kit is used in conjunction with GM7xx seismic detectors to monitor safe and strong room doors. It consists of 3 plates:
    - A detector plate permanently fitted to the detector and incorporating a micro-switch and magnetic contact
    - A door plate located on the door of the monitored object
    - A rest plate located on the side of the monitored object
  - The seismic detector can be either positioned on the door plate (night time operation / armed position) or on the rest plate (day time operation / unarm position).

- **Anti-drill foil**
  - The GMX7 is a self-adhesive protection foil that is used to protect seismic detectors from external mechanical attacks. The GMX7 is fitted inside the cover of the detector.