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The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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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.

www.vanderbiltindustries.com

VANDERBILT

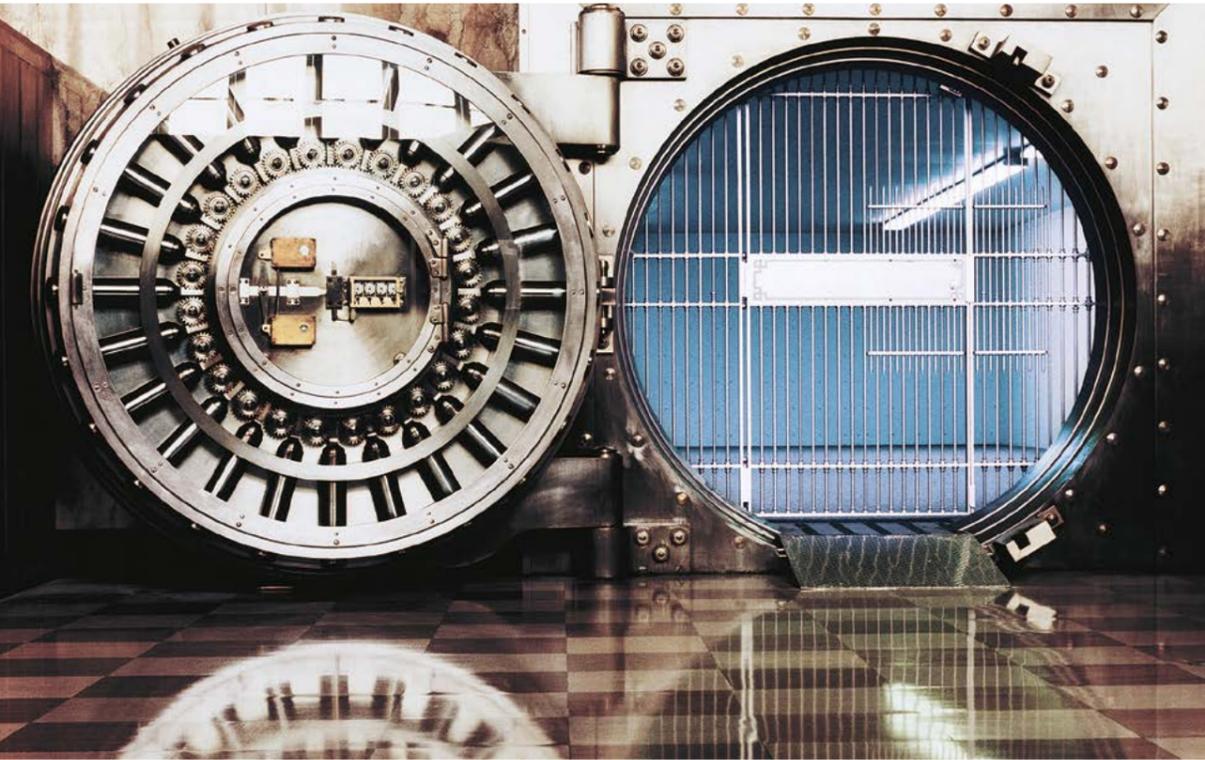


Vanderbilt Seismic Detectors



24/7 protection of cash and valuables

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Professional attack detection for specialist applications

The range of seismic detectors from Vanderbilt are specifically designed for round-the-clock monitoring of safes, automated teller machines (ATMs), night deposits, strong rooms and modular vaults providing protection against vandalism and theft. Easy to install and program, the detectors offer one of the highest detection range and false alarm immunity on the market, and are optimized for installation on steel, concrete and synthetic composite materials.

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.

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 specialised 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.

■ Full range of detectors and accessories

The seismic detectors are optimised for installation on concrete, steel and even composite synthetic materials, allowing them to be used in a wide range of applications and environments. The range of accessories includes swivel mounting plates, floor and wall recess boxes, as well as anti-drilling foils and watertight housings for protection against environmental influences.

■ Quality manufacturing

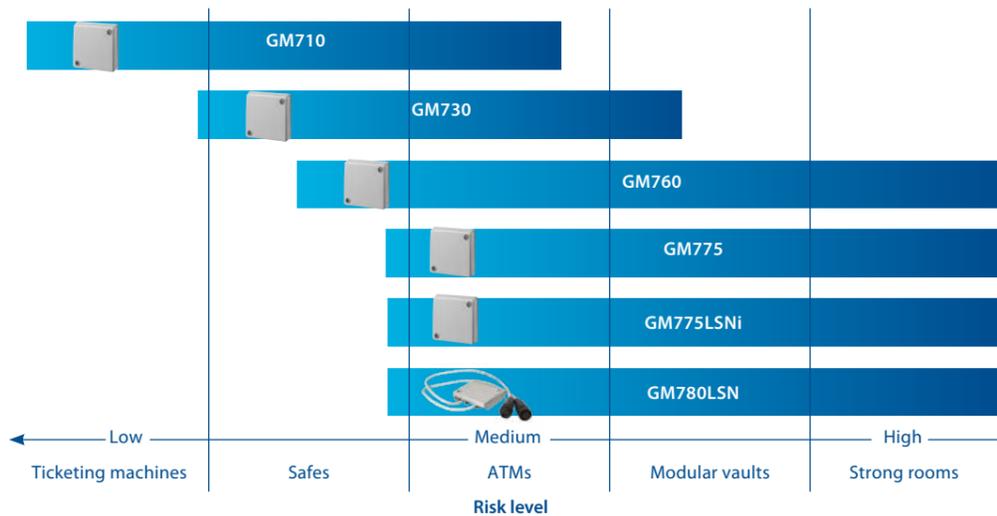
All seismic detectors benefit from Vanderbilt’s renowned quality manufacturing process and control. Added to the innovative technology applied to the detector range, the detectors’ reliability and accuracy is second to none.

Highlights

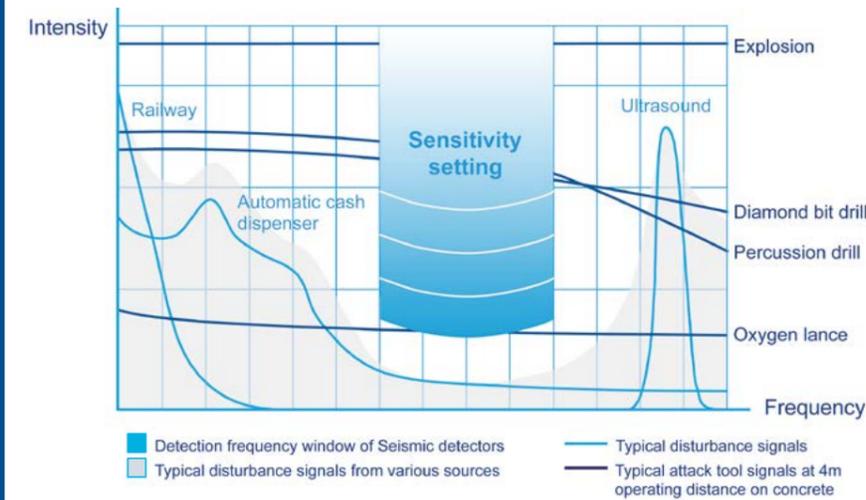
- Reliable detection of thermal and mechanical attacks
- Optimal structural damage limitation
- High immunity to false alarms
- Adjustable, application-specific sensitivity
- Fast and flexible installation
- 24-hour monitoring

Seismic detectors for all applications: from ATM's, ticketing machines to strong rooms.





Seismic detectors application range



Sophisticated digital signal processing

GM710 seismic detector

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

GM730 seismic detector

The GM730 offers an outstanding price/performance ratio with its advanced functionality and features. It is perfectly suited for the protection of valuable repositories made of steel or concrete. This makes it the first choice for applications such as ATMs and safes.

GM760 seismic detector

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

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. Its electronic alarm output is ideal for a connection with the GMYA7 test and indication system.

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.

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.

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 (LSNi)
- GM780LSN watertight with field bus connectivity for applications within Local Security Networks (LSN)

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 using the Senstec digital signal processing, based on unique algorithms developed by Vanderbilt and compared to those threat profiles to determine whether an alarm should be triggered.

Sensitivity is key

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.

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).

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.

Highlights

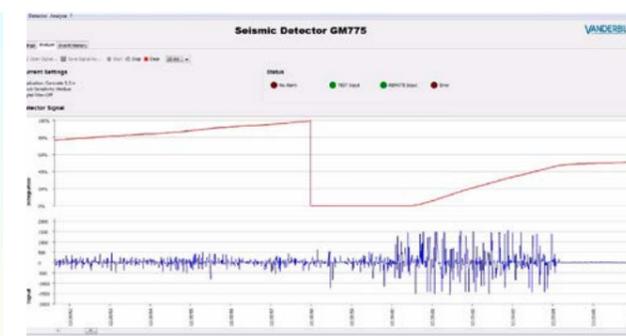
- Patented Senstec technology
- The unique and highly sensitive bimorph sensor detects all attack types, including thermal
- Digital signal processing with algorithms for typical threat profiles
- Numerous options for manual and automatic testing



Patented bimorph sensor



Configuration, monitoring & event recording with SensTool (GMSW7)



	GM710	GM730	GM760	GM775	GM775LSNi	GM780LSN
Material/Applications						
Steel (vaults, ATMs, night depositories)	■	■	■	■	■	■
Concrete		■	■	■	■	■
Synthetic material (lightweight vaults, ATMs armoured with synthetic materials)			■	■	■	■
Detection range						
Operating range on concrete (up to) – thermal tools – mechanical tools	2 m 10 m	4 m 16 m	5 m 18 m	5 m 18 m	4 m 16 m	4 m 16 m
Covered area (up to)	12 m ²	50 m ²	80 m ²	80 m ²	50 m ²	50 m ²
Features						
Remote sensitivity		■	■	■		
Sensitivity adjustment – programmable SensTool (user mode) – DIP switch settings	4 levels (fixed)	5 levels 4 levels (3 fixed)	7 levels 4 levels (3 fixed)	7 levels 4 levels (3 fixed)	6 levels via LSN	6 levels via LSN
Tamper protections – opening – tear off / removal	■ ■	■ ■	■ ■	■ ■	■ ■	■
Low-/high-temperature monitoring		–15 to +85 °C fixed	–40 to +85 °C adjustable	–40 to +85 °C adjustable	–40 to +85 °C adjustable	–40 to +85 °C adjustable
Anti drilling shield / foil		Optional	Optional	Optional		
Event memory			■	■		
Electronic alarm output				■		
Technical specifications						
Supply voltage	8–16V	8–16V	8–16V	8–16V	max. 33V (LSN)	max. 33V (LSN)
Current consumption – quiet – on alarm	3mA 5mA	3mA 5mA	3mA 5mA	3mA 5mA	3mA 5mA	1.4mA 1.9mA
Operating temperature	–40 to +70 °C	–20 to +70 °C	–25 to +70 °C			
Housing protection	IP43	IP43	IP43	IP43	IP43	IP67
Approvals						
VdS - GERMANY		■		■	■	■
VSÖ - AUSTRIA		■		■	■	
IMQ - ITALY		■	■			
CNPP - FRANCE		■	■			
INCERT - BELGIUM		■	■			
SBSC - SWEDEN		■		■		
PIE - POLAND		■	■			
UL - US & CANADA	■	■	■			
CCC - CHINA	■	■	■			
RCM - AUSTRALIA	■	■	■			
REQ - THE NETHERLANDS		■	■			
F&P - DENMARK		■				
MABISZ - HUNGARY		■	■			
PD6662 - UK	■	■	■			
FG - FINLAND		■				
NBÚ - CZECH		■	■			
BSI - UK		■			■	■

Test & Verification



GMXS1



GMXS5



GMYA7

Internal test transmitter
The GMXS1 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 GMXS5 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 independent of an intruder alarm system. The GMYA-AS can only be used with the seismic detector GM775 and in combination with the GMXS1.

Mounting & Installation



GMXP0



GMXC2

Mounting plate
The GMXP0 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 GMXC2 is a 16mm diameter conduit connection sleeve, which ensures a fixed and secure connection and protects the cable exit of the Senstec seismic detectors.

Monitoring



GMXP3



GMP3Z



GMAS6



GMXD7

Lock protection
The GMXP3 / 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 / unarmed position).

Anti-drill foil
The GMXD7 is a self-adhesive protection foil that is used to protect seismic detectors from external mechanical attacks. The GMXD7 is fitted inside the cover of the detector.

Housing & Enclosures

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



GMXW0



GMXB0

Wall / Ceiling recess box
The GMXW0 is a mounting kit including a polystyrene mould that sits in the unset concrete. The polystyrene mould is mounted on a metal back plate with tapped mounting holes for the GM7xx seismic detectors. Once the concrete is set, the polystyrene can be carefully removed to expose a recess box. It offers sufficient space to install a GM7xx detector in the wall or the ceiling and provides access for cables via conduit to and from the detector.

Floor recess box
The GMXB0 is a reinforced flush mounting box, which provides a secure solution for floor mounting in concrete as it withstands loads of up to 2 tonnes.