

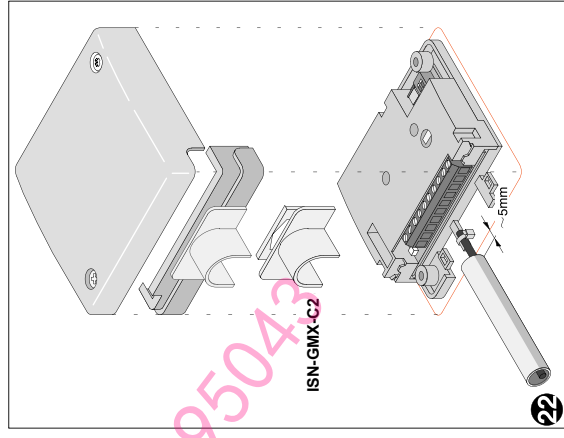
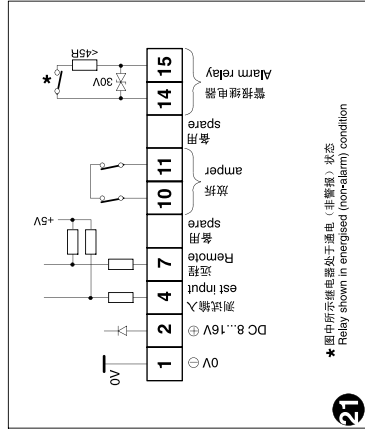
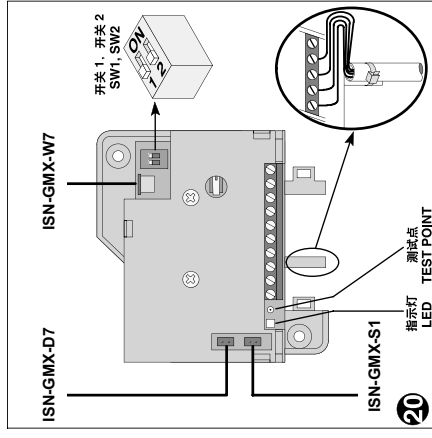
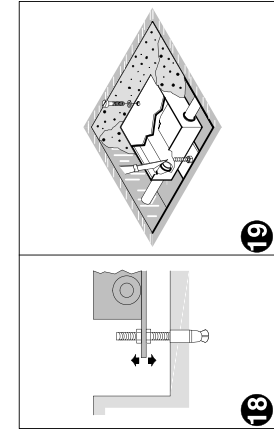
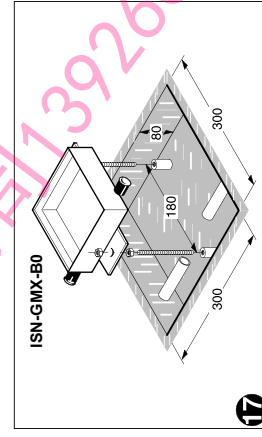
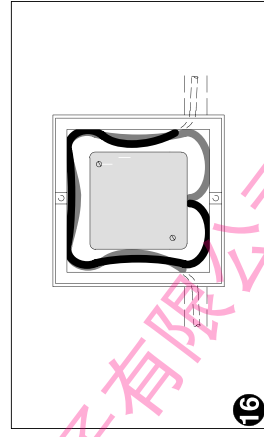
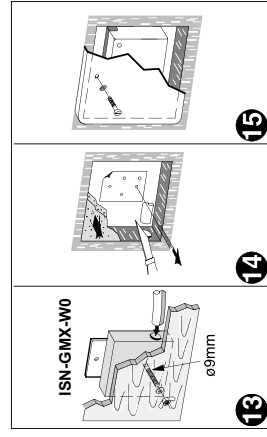
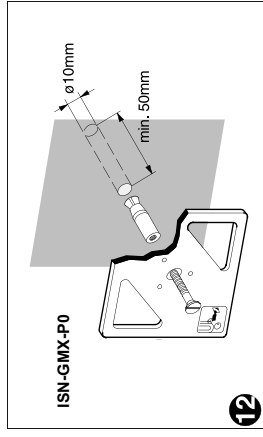
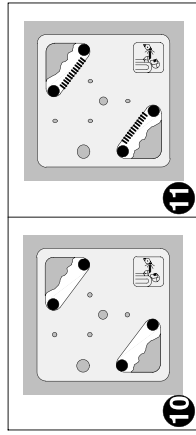
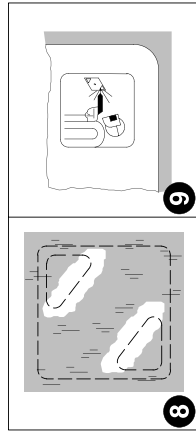
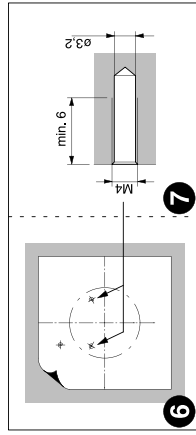
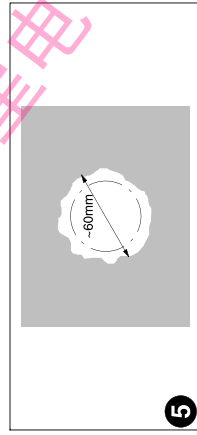
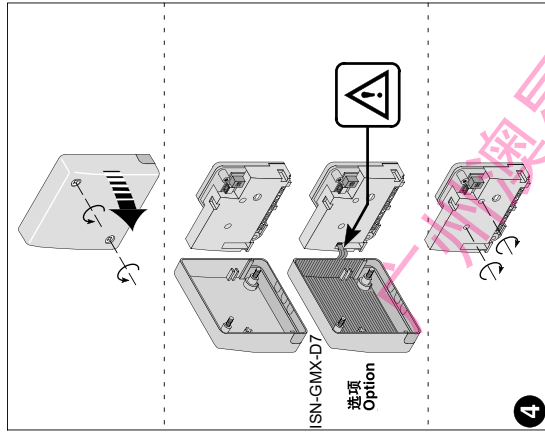
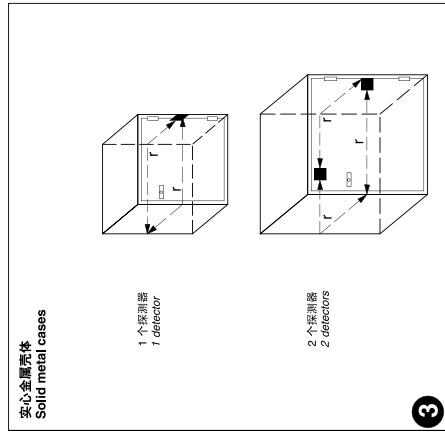
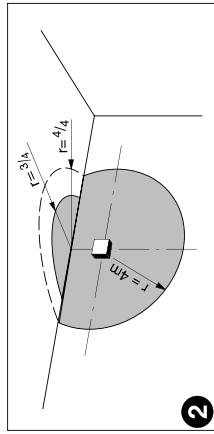
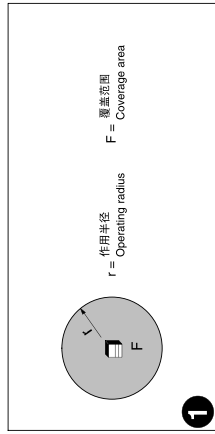
ISN-SM-50

震动探测器
Seismic detector

DRAFT



安装手册 098321_d_...版本
Edition 09.2005Supersedes
09.2005 取代
098321_c_...-AG00006684



震动探测器 ISN-SM-50 安装指南

应用范围

- ISN-SM-50 是具有新的探测和参数化功能的震动探测器。
- 使用自有专利的干扰过滤器和新的时钟过滤器，提高了探测水平。
- 本探测器可与超声波探测器配合使用。

震动探测器 ISN-SM-50 为以下项目提供可靠的保护:

- 保险箱
 - 保险库墙壁
 - 保险柜门
 - 自动售货机
 - 售票机
- 能准确探测爆炸性攻击及使用任何已知工具(如金钢钻、液压工具、气枪及炸药)的闯入企图。

探测范围

探测范围很大程度上取决于所探测物体的材料属性。

- 对铁质材料的作用半径: $r = 2m$
- 对加固混凝土材料的作用半径: $r = 4m$

● 如果存在同层连接, 安装在保险库墙壁上的探测器的探测范围也可能延伸到天花板、地板或角落的部分区域。在这些情况下, 作用半径应设置范围的 $\frac{3}{4}$ (图 2)。

● 两种材料的连接处往往会导致结构噪声的传播。因此, 必须总是在门与墙体上各安装一个探测器。本规则同样适用于保险库的入口门。

金属壳体监测

探测范围为探测器监视的机械障碍物。探测范围很大程度上取决于所监测物体的材料属性。实践证明铁质材料的作用半径 $r_b = 2.0m$

注: 两种材料的连接往往在减弱结构噪声传播, 因此, 不建议将本产品用于标准多层保险箱。

安装

打开探测器

拧开紧固螺丝并小心取下金属盖。

- 现在, 我们可以看到震动探测器。

固定探测器

请仅使用两个随附的、已预装配好的 M4 十字头螺钉固定探测器。

直接安装在钢板上

探测器可以直接安装在表面光滑的钢板上, 确保完全清除钢板表面与探测器之间的所有残留油漆, 而且安装表面的平整度在 0.1mm 以内, 如果无法实现, 则使用 ISN-GMX-PO 安装板。

1. 清除探测器安装位置的残余油漆(图 5)。

2. 粘贴上钻孔模板并标出钻孔中心(图 6)。

3. 仅钻两个直径为 3.2mm 的带标记小孔, 并放入至少 6mm 深的 M4 螺钉(图 7)。清理螺钉孔的毛刺。

4. 安装探测器。

请勿在探测器与物体之间使用垫圈。

使用 ISN-GMX-PO 模板进行间接安装

1. 清除或埋的钢板, 请涂上 ISN-GMX-PO 安装板。
2. 在清除区域涂漆(图 8)。
3. 将探测器外壳与导线管连接及探测器安装板配合, 并拧紧外壳螺钉。

在钢板上安装

1. 清除或埋的钢板, 请涂上 ISN-GMX-PO 安装板。
2. 在清除区域涂漆(图 8)。
3. 将探测器外壳与导线管连接及探测器安装板配合, 并拧紧外壳螺钉。

在混凝土上安装

请仅使用两个随附的、已预装配好的 M4 十字头螺钉固定探测器。

1. 清除或埋的钢板, 请涂上 ISN-GMX-PO 安装板。

2. 在清除区域涂漆(图 8)。

3. 将探测器外壳与导线管连接及探测器安装板配合, 并拧紧外壳螺钉。

4. 安装探测器。

5. 拧紧外壳螺钉。

6. 安装盖板(图 15)。

7. 拧紧外壳螺钉。

8. 安装探测器。

9. 拧紧外壳螺钉。

10. 安装盖板(图 15)。

11. 拧紧外壳螺钉。

12. 安装探测器。

13. 拧紧外壳螺钉。

14. 安装盖板(图 15)。

15. 拧紧外壳螺钉。

16. 安装探测器。

17. 拧紧外壳螺钉。

18. 安装盖板(图 15)。

19. 拧紧外壳螺钉。

20. 安装探测器。

21. 拧紧外壳螺钉。

22. 安装盖板(图 15)。

23. 拧紧外壳螺钉。

24. 安装探测器。

25. 拧紧外壳螺钉。

26. 安装盖板(图 15)。

27. 拧紧外壳螺钉。

28. 安装探测器。

试运行

如果要使用 ISN-GMX-S1 发射器, 则必须先连接线路, 再打开电源。

1. 打开电源, 等待 1 分钟, 探测器准备工作。
2. 功能检查: 在监视区域模拟攻击信号, 如使用螺丝起子轻轻刮擦, 或使用 ISN-GMX-S1/S5 测试信号。
3. 干扰检查: 在端口 1 (0V) 和“测试点”间连接一个万用表(阻抗 $\geq 20k\Omega$), 以测量积分信号:

- 静止水平: 0V
- 积分信号启动: 1.0V
- 警报阈值(无负载): 3.0V

4. 小心盖子上盖子, 上紧外壳螺钉。

探测器的拆卸

如果指定需要探测器的拆卸, 请:

1. 在探测器外壳螺丝孔上贴上防拆封条。

ISN-SMS-W7 Software SensTool

SensTool 软件使您可以分别设置工作参数。此外, 还可查看和保存当前信息, 如积分信号。

视相应的应用场合、材料和物体及干扰情况而定, 可能可以使用以下的额外设置。

探测器灵敏度	1.0m
钢	1.5m
混凝土	2.0m
低	2.5m
中	4.0m
高	

推荐灵敏度设置

设置震动探测器时, 以下近似值可供参考。

应用场合	灵敏度	震动强度
售票机	低	低
功能相关噪声大, 暴露放置	低	低
功能相关噪声大的自动柜员机, 日间/夜间/定向/定向/防门	中	中
带有功能相关噪声的报警系统/报警系统, 报警系统	中	中
带有轻微干扰的报警系统, 组合金属	高	高
干扰较小的报警系统, 组合金属	高	高

维护

定期(至少一年一次)检查探测器工作电压及是否安全。

认证

CE 符合 G106008 VdS 认证, C 类。

必须遵循任何与本产品信息应用有关的国家认证基本要求。

探测器 技术参数

- 电源电压(额定值 12VDC).....8.0...16.0VDC
- 电源消耗(电压为 12VDC, 静态).....一般 3mA
- 报警条件.....5mA

- 报警输出, 端子 14+15: 在报警和/或低电压时报警
- 报警继电器: 30VDC/100mA, 电阻负载
- 报警电阻: $\leq 45\Omega$
- 报警持续时间: ≤ 2.5 秒

破坏活动监测:

- 破坏, 端子 10+11: 在遭到破坏时开启
- 盖子 + 机身微型开关: 30VDC/100mA
- 接收负载: $<7V, .8V \Rightarrow$ 警报
- 盖子上的防粘金属片: 破坏 \Rightarrow 警报

灵敏度降低输入, 端子 7:

- 用于降低: 低 $\leq 1.5V$ 高 $\geq 3.5V$
- 降低至, 调整幅度: 实际设置的 1/8

可使用 SensTool 软件编程

- 功能测试输入, 端子 4: 用于测试: 低 $\leq 1.5V$ 高 $\geq 3.5V$
- 使用 ISN-GMX-S1 测试周期: ≤ 3 秒
- 使用 ISN-GMX-S5 测试周期: ≤ 90 秒

- 测量输出, 测试点, 模拟积分信号
- 静止水平: 0V
- 积分信号启动: 1.0V
- 警报阈值(无负载): 3.0V
- 对铁质材料的作用半径: $r = 2m$

- 环境条件: 对铁质材料的覆盖范围: 13m²
- 工作温度: -40...+70°C
- 存放温度: -50...+70°C
- 湿度: DIN F 级
- 外壳保护类别(EN60529, EN50102): IP45S
- VdS 认证: 等级 III

对 PD 干扰不敏感

0.01...2GHz (IEC 801-3)

30V/m

附件

- ISN-GMX-W0 墙壁凹穴装置, 带盖子
- 外壳保护类别: IP51
- 盖子最大承载能力: 25kg

ISN-GMX-R0 地板盒

- 外壳保护类别: IP51- 盖子最大承载能力: 1000kg

ISN-GMX-W0 防拆外壳

- 外壳保护类别: IP65- 盖子最大承载能力: 1000kg

详细订购信息

探测器附带的元件

- 1 个震动探测器
- 1 本安装说明书
- 1 个安装模板
- 3 条线带

震动探测器

- ISN-SM-50
- ISN-GMX-PO
- ISN-GMX-W0
- ISN-GMX-R0
- ISN-GMX-B0
- ISN-GMX-P8
- ISN-GMX-S1
- ISN-GMX-S5
- ISN-GMX-C2
- ISN-SMS-W7

防粘金属片 (10 件).....ISN-GMX-D7

Spacer 2 mm to GMX3 3 / Z.....ISN-GMX-P83

Spacer 2 mm to GMX3 3 / Z.....ISN-GMX-P84

Wateright housing GMX/WG 0.....ISN-GMX-W0

Test transmitter GMXS 1.....ISN-GMX-S1

Fixing device GMAS 6.....ISN-GMA-S6

Swivel plate GMXPZ.....ISN-GMX-PZ

震动探测器 ISN-SM-50 安装指南

应用范围

- ISN-SM-50 是具有新的探测和参数化功能的震动探测器。
- 使用自有专利的干扰过滤器和新的时钟过滤器，提高了探测水平。
- 本探测器可与超声波探测器配合使用。

震动探测器 ISN-SM-50 为以下项目提供可靠的保护:

- 保险箱
 - 保险库墙壁
 - 保险柜门
 - 自动售货机
 - 售票机
- 能准确探测爆炸性攻击及使用任何已知工具(如金钢钻、液压工具、气枪及炸药)的闯入企图。

探测范围

探测范围很大程度上取决于所探测物体的材料属性。

- 对铁质材料的作用半径: $r = 2m$
- 对加固混凝土材料的作用半径: $r = 4m$

● 如果存在同层连接, 安装在保险库墙壁上的探测器的探测范围也可能延伸到天花板、地板或角落的部分区域。在这些情况下, 作用半径应设置范围的 $\frac{3}{4}$ (图 2)。

● 两种材料的连接处往往会导致结构噪声的传播。因此, 必须总是在门与墙体上各安装一个探测器。本规则同样适用于保险库的入口门。

金属壳体监测

探测范围为探测器监视的机械障碍物的表面。探测范围很大程度上取决于所监测物体的材料属性。实践证明铁质材料的作用半径 $r_b = 2.0m$

注: 两种材料的连接往往在减弱结构噪声传播, 因此, 不建议将本产品用于标准多层保险箱。

安装

打开探测器

拧开紧固螺丝并小心取下金属盖。

- 现在, 我们可以看到震动探测器。

固定探测器

请仅使用两个随附的、已预装配好的 M4 十字头螺钉固定探测器。

直接安装在钢板上

探测器可以直接安装在表面光滑的钢板上, 确保完全清除钢板表面与探测器之间的所有残留油漆, 而且安装表面的平整度在 0.1mm 以内, 如果无法实现, 则使用 ISN-GMX-PO 安装板。

1. 清除探测器安装位置的残余油漆(图 5)。

2. 粘贴上钻孔模板并标出钻孔中心(图 6)。

3. 仅钻两个直径为 3.2mm 的带标记小孔, 并放入至少 6mm 深的 M4 螺钉(图 7)。清理螺钉孔的毛刺。

4. 安装探测器。

请勿在探测器与物体之间使用垫圈。

Papiergröße = 360 x 270mm

Seismic detector ISN-SM-50 Installation

Application

- The ISN-SM-50 is a seismic detector with new detection and parameterization features.
- The detection is improved by the patented disturbance filter and new clock filter.
- The detector may be used together with ultrasonic detectors.
- The seismic detector ISN-SM-50 provides reliable protection for
 - safes
 - strongroom walls
 - strongroom doors
 - automatic cash dispensers
 - vending machines
 - ticket machines

against attack with explosives and break-in attempts with any of the known tools, such as diamond-head drills, hydraulic pressure tools, oxygen lances and attack using explosives.

Coverage area fig. 1 + 2

The coverage area is highly dependent on the material of the object to be monitored:

- Operating radius on reinforced concrete: $r_{OP} = 4m$
- The coverage area of the detector on strongroom or walls may also extend to part of the ceiling, floor, or other corners if an homogeneous connection exists. In such cases the operating radius is reduced to $\frac{1}{3}$ of the range setting (fig. 2).
- Joints between two materials always damp the structure-borne noise transmission. One detector on the floor and one on the body must always be installed. This also applies to entrance doors of strongrooms.

Surveillance of metal cases fig. 3

The coverage area is designated as the surface of a mechanical obstacle which is monitored by a detector. The coverage area is highly dependent on the material of the object to be monitored. Practical experience has shown that the operating radius for steel is $r_{OP} = 2.0m$

Note: Joints between two materials always damp the structure-borne noise transmission, therefore not recommended on standard multilayer safes.

Installation

Opening the detector fig. 4

Unscrew the captive screws and lift off the metal cover carefully.

- The seismic sensor is now exposed.

Fastening the detector fig. 4

Use only the two pre-assembled M4 cross-head screws provided in order to fix the detector.

Direct mounting on steel fig. 5 to 7

The detector can be installed directly on steel plates with a smooth surface. Ensure that any residual paint between the steel surface and the seismic sensor is completely removed and the mounting surface is level to within 0.1mm. If this is not possible, use mounting plate ISN-SM-KP0

1. Remove residual paint from sensor installation site (fig. 5).
2. Stick on drilling template and centerpunch drill holes (fig. 6).
3. Drill only the two marked holes of 3.2mm dia. and tap M4 thread at least 6mm deep (fig. 7). Deburr threaded holes.

Mount detector.

Do not use silicon grease between sensor and object

Indirect installation with mounting plate ISN-GMX-P0

fig. 8 to 11

In the case of uneven or hardened steel plates, weld on mounting plate ISN-GMX-P0

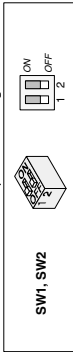
1. Remove residual paint from the welding area (fig. 8).
2. Weld mounting plate in four fixing points. Ensure correct positioning (fig. 10).
3. The welding symbol must be visible on the front of the mounting plate (fig. 9).
3. Weld along surfaces indicated. Tap off slag and remove weld spatter from the plate surface (fig. 11).
4. Mount detector.

ISN-GMX-D7 Anti-drilling foil fig. 4

A special anti-drilling foil is available for fitting into the detector cover as an additional protection against tampering, if required. For installation refer to the separate mounting sheet delivered with the ISN-GMX-D7

Programming

After the detector housing has been opened, use the switches to select the respective settings.



Application settings, SW1 and SW2

Select the sensitivity setting to suit the application, the material and the object with the associated interference. **Important:** During commissioning, be sure to check for function-related noise (see "Commissioning").

Settings on the detector	Steel 2.0m	Steel 1.5m	Concrete 4.0m	User Mode, with ISN-SMS-W7 Software SensTool
Detector sensitivity	Steel 1.0m	Steel 1.5m	Concrete 2.5m	low
Shock sensitivity	low	mid	high	high

Recessed mounting with wall recess plate

1. Drill 9mm dia. hole in wooden concrete mould.
2. Fasten the wall recess set by inserting threaded bolt and tightening wing nut (fig. 13).
3. Push the installation conduit through the polystyrene block.
4. After removing mould, unscrew threaded bolt. Scrape out polystyrene and cut off conduit flush (fig. 14).
5. Mount detector.
6. Mount cover plate (fig. 15).

Cable lead in wall box and floor box fig. 16

Insert cable with reserve loop into the box. Ensure appropriate cable length when drawing the cable in.

Installation in floor boxes ISN-GMX-B0 fig. 17 to 19

To install the floor boxes ISN-GMX-B0 a recess with a base area of at least 300 x 300mm and a depth of 80mm is required (fig. 17). Use a polystyrene block to keep this recess open when pouring in the wet concrete. Two threaded bolts M6x100mm screwed into metal plugs provide the acoustic connection between the detector and the concrete floor.

1. Level floor box using the nuts on the two threaded bolts. Fix position finally by tightening the lock nuts (fig. 18).
2. Feed installation conduits through sealing sleeves. Fill recess with wet cement.
3. Pull cable through and thoroughly seal the entry openings for protection against moisture (fig. 19).
4. Mount the detector.
5. Fit cover plate. Cut out wood or carpet floor covering and stick to cover plate.

Installation accessories

ISN-GMX-C2 Conduit connection sleeve fig. 22

The function of the ISN-GMX-C2 conduit connection sleeve is to ensure fixed and secure connection of surface-mounted conduits or an outside diameter of up to 16mm. Smaller-size surface-mounted conduits may require fitting of an appropriate transition sleeve of a maximum outside diameter of 16mm.

To fit the conduit connection sleeve, proceed as follows:

1. Route the surface-mounted conduit to within about 5mm of the detector housing and fit the conduit con-

Commissioning

If the ISN-GMX-S1 test transmitter is to be used, it must be switched before power is switched on.

Procedure:

1. Switch on voltage – wait 1 minute – the detector is ready for operation.
2. Functional check: Simulate an attack signal in the supervised area, for example scratch lightly with a screwdriver or test signal ISN-GMX-S1/S5 with the detector should trigger an alarm.
3. Interference checks: Connect an universal measuring instrument (impedance $\geq 20k\Omega$) between terminal 1 (0V) and "TEST POINT" for integrator signal:
 - quiescent level: 0V
 - alarm threshold (without load): 3.0V
4. Carefully close the cover, tightening the housing screw.

Tamper seal of the detector

If tamper seal of the detector is specified: Apply an anti-tamper seal over the detector cover screw hole.

SensTool ISN-SMS-W7

The SensTool software allows operating parameters to be set individually. In addition, current information such as integrator signals can be viewed and stored.

The following additional settings are possible, depending on the application, material and object, with corresponding interferences:

Detector sensitivity	Steel	Concrete
1.0m	Steel	Concrete
1.5m	Steel	Concrete
2.0m	Steel	Concrete
2.5m	Steel	Concrete
4.0m	Steel	Concrete

Recommended sensitivity settings

The following approximate values can be used as reference values for the setting of the seismic detector.

Application	Sensitivity	Shock
Ticket machine with heavy functional related noises, exposed location	Steel 1.0m	low
Autom. cash dispenser, Day/night deposit, Safe door with heavy functional related noises	Steel 1.5m	mid
Armoured safe, Strongroom door with functional related noises	Steel 2.0m	mid
Strongroom, Modular vault with light interferences	Concrete 2.5m	high
Strongroom, Modular vault with minimum interferences	Concrete 4.0m	high

Maintenance

Test detectors regularly (at least once a year) for operation and firm mounting.

Approvals

CE conforms with VdS approval, class C G106008 Any national approval requirements relating to the application of the product must be complied with.

Technical data

Detector

Supply voltage (nom. 12VDC) 8.0...16.0Vdc

Current consumption (at 12Vdc, quiescent) typ. 3mA
- alarm condition 5mA

Alarm output, terminals 14+15:
- relay opens on alarm and/or low voltage
- series resistance 30Vdc/100mA, ohmic load
- alarm holding time 2.5s

Sabotage surveillance:

- Tamper, terminals 10+11:
- microswitches for cover + body opens on tamper
- contact load $7V_{DC}$/30VDC/100mA
- supply voltage $7V_{DC}$/30VDC
- alarm lamp → alarm

Sensitivity reduction input, terminal 7:
- for reduction LOW $\leq 1.5V$ / HIGH $\geq 3.5V$
- reduction to 1/8 of the actual setting

Sensitivity, adjustable in SW programmable with SensTool

Functional test input, terminal 4:
- for test LOW $\leq 1.5V$ / HIGH $\geq 3.5V$
- ISN-GMX-S1 test duration $\leq 3s$
- ISN-GMX-S5 test duration $\leq 30s$

Measuring output, TEST POINT: analogue integration signal (quiescent level) 1.0V
- integration start 3.0V
- alarm threshold (without load) 3.0V

Operating radius on steel $r = 2m$
Coverage area on steel 13m²

Ambient conditions:
- operating temperature -40...+70 °C
- storage temperature -50...+70 °C
- humidity, DIN class F 95%
- housing protection category (EN60529, EN50102) IP45
- VdS environmental class II
- VdS environmental interferences III
- 0.01...23GHz (IEC 801-3) 30V/m

Accessories

ISN-GMX-W0 Wall recess set with cover
ISN-GMX-S100 Sealing sleeve for IEC IP51
- max. carrying capacity of cover 25kg

ISN-SM-KP0 Floor box
- housing protection category IEC IP51

ISN-GMX-W30 Waterlight housing
- max. carrying capacity of cover plate 100kg
- housing protection category IEC IP65
- max. carrying capacity of cover 1000kg

Details for ordering

Elements supplied with detector

- 1 Seismic detector
- 1 Mounting template
- 3 Cable straps

ISN-SM-50

ISN-GMX-P0

ISN-GMX-W0

ISN-GMX-B0

ISN-GMX-W30

ISN-GMX-P83

ISN-GMX-S1

ISN-GMX-S5

ISN-GMX-C2

ISN-SMS-W7

ISN-GMX-D7

ISN-GMX-PSS2

ISN-GMX-PSS4

ISN-GMX-W0

ISN-GMX-S1

ISN-GMX-S5

ISN-GMX-S6

ISN-GMX-PZ