

Vibration Detector

SVD-101

Installation Manual

1. Description

SVD-101 vibration detector has successfully brought in the foreign designs and it aims to carry out frequency spectrum and energy analysis of vibration wave which was produced strike, drilling, gas cutting, instant explosion and high temperature by using digital analysis technology in combination with specific features in practical applications. Owing to its unique anti-interference technology, it can effectively prevent such normal vibration activity around the protected area without the risk of creating false alarms; such as running vehicles, construction field and ATM itself, and it has wide application in security system for ATM.

2. Technical Specifications

| | |
|-----------------------|--|
| Dimensions | 100mm×80mm×39.5mm |
| Operating Voltage | 9 – 15 VDC |
| Current Consumption | 15 mA |
| Alarm Output | 28 VDC, 500 mA |
| Alarm Output Duration | ≥ 2 sec |
| Operating Temperature | -10°C - +50°C |
| Storage Temperature | -20°C - +70°C |
| Alarm Indication | LED indicate, output 3 |
| Sensitivity | 5 steps |
| Tamper Protection | Dual tamper alarm for cover and base plate |
| Low-voltage Alarm | Voltage drops below 7.5 V |

3. Detection Range

| Material | Sensitivity setting | High-temperature Gas Cutting | Impact Drill | Electric Drill | Instantaneous Explosion |
|----------------------|---------------------|------------------------------|----------------|----------------|-------------------------|
| Concrete Steel Plate | Stage 1 (Max.) | 2 m | 5 m 5 m | 3 m | Alarm |
| Concrete Steel Plate | Stage 2 | 1.5 m | 3 m 3 m | 2 m | Alarm |
| Concrete Steel Plate | Stage 3 | 1.2 m | 2 m 2 m | 1.5 m | Alarm |
| Concrete Steel Plate | Stage 4 | 1 m | 1 m 1 m | 1 m 1 m | Alarm |
| Concrete Steel Plate | Stage 5 (Min.) | Low possibility of alarm | 0.5 m 0.5 m | 0.5 m 0.5 m | Alarm |

※ The above datum listed is only serve as reference for installation. These distance range may vary as per different vibration transmission mediums, please according to the actually measurement data in practical applications.

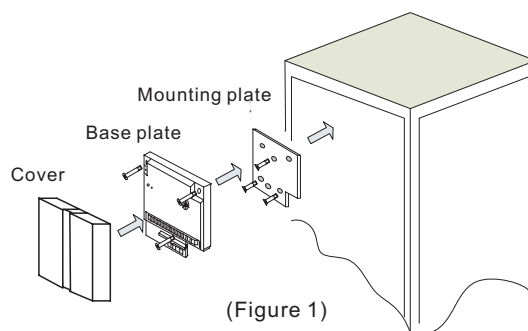
4. Status of LED Indicator

| | |
|----------|---|
| Blinking | Detector will be deemed to in normal operation. |
| ON | It indicates excessive ambient interference to field installation.(It must decrease the sensibility of detector until the LED indicator blink before installation and operation.) |
| OFF | Detector is in alarm mode. |

5. Installation and Wiring Diagram

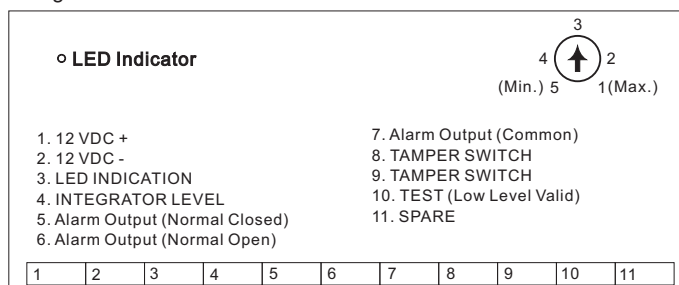
Installation sequence:

- Firstly, fix the mounting plate firmly to ATM to ensure satisfactory detection;
- After that, fix the SVD-101 vibration detector to the mounting plate with screwdriver (see Figure 1);



(Figure 1)

- Finally, connect alarm output signal properly; please refer to Figure 2.



6. Test

It is not necessary to install mounting plate in case of debugging. Connect the circuit properly to make sure LED indicator blink when power is switched on, and follow testing methods listed below.

| | | |
|------------------|--|--|
| Testing Method 1 | | <p>Make sure pin 1 and 2 are in short circuit; initiate internal testing function to ensure alarm by the detector within 30 seconds as well as blink-off process of the LED indicator. This indicates that internal circuit of the detector is normal. Caution: Pin 10 must be grounded before initiating such function.</p> |
| Testing Method 2 | | <p>Disconnect pin 1 and 2, and use screwdriver to scratch the edge of mounting plate for 30 seconds or use hammer to knock at the ATM shell until the blinking LED indicator is extinguished. This indicates that alarm is normal.</p> |

※ Make sure to cut off the connecting line (pin 10) and negative pole upon the completion of test if testing method 1 is used. Install the cover to complete testing.

7. Setting of Sensitivity Knob

SVD-101 electrified will be deemed to in normal operation if LED indicator blink. The LED indicator may keep blinking to the extent of incurring false alarm in case of deposit and withdrawal with ATM or excessive ambient interference. Under such circumstance, it must turn the sensitivity knob in counterclockwise direction from maximum stage to the minimum one until constant blinking LED indicator recover normal blink. The measured voltage of pin 4 and 2 should be 0V at this point.

振动探测器 SVD-101

一. 概述

SVD-101振动探测器在设计上成功的吸收了国外设计方法, 结合实际在使用上的具体特点, 采用数字化分析技术, 对敲击、钻击、气割、瞬间爆炸、高温等信号源产生的振动波进行频谱及能量分析。采取独特的抗干扰技术, 对行驶汽车、施工工地、ATM自身的工作而产生振动的自然源有良好的抑制功能, 被广泛的应用于ATM自动存取机的安全防范系统。

二. 技术参数

| | |
|----------|-------------------|
| 外形尺寸 | 100mm×80mm×39.5mm |
| 工作电压 | 9VDC - 15 V |
| 静态耗电 | 15 mA |
| 报警输出负载 | 28 VDC, 500 mA |
| 报警输出持续时间 | ≥ 2 秒 |
| 工作温度 | -10°C - +50°C |
| 储存温度 | -20°C - +70°C |
| 指示灯 | 正常时指示灯闪烁, 报警时熄灭 |
| 灵敏度 | 5级灵敏度可调 |
| 防拆保护 | 盖板和底板双重防拆报警 |
| 低电压报警 | 工作电压低于 7.5V |

三. 探测距离

| 材料 | 灵敏度 5级可调 | 高温气割 | 冲击钻 | 电钻 | 瞬间爆炸 |
|-----------|-------------|--------------|--------------|--------------|------|
| 混凝土 钢板 | 1级(最大) | 1米 2米 | 5米 5米 | 5米 5米 | 报警 |
| 混凝土 钢板 | 2级 | 0.6米 1.5米 | 3米 3米 | 3米 3米 | 报警 |
| 混凝土 钢板 | 3级 | 0.4米 1.2米 | 2米 2米 | 2米 2米 | 报警 |
| 混凝土 钢板 | 4级 | 0.2米 1米 | 1米 1米 | 1米 1米 | 报警 |
| 混凝土 钢板 | 5级(最小) | 不易报警 | 0.5米 0.5米 | 0.5米 0.5米 | 报警 |

※ 表中数据仅供安装参考, 具体距离范围因振动传输介质不同而存在差异, 以实测为准。

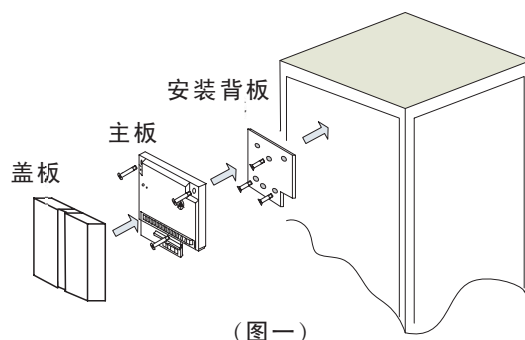
四. 指示灯状态

| | |
|-------|---------------------------------------|
| 指示灯闪烁 | 上电指示灯闪烁, 探测器工作正常。 |
| 指示灯常亮 | 表示现场安装环境干扰过大(必须降低灵敏度, 直至指示灯闪烁才可安装使用)。 |
| 指示灯灭 | 探测器处于报警状态。 |

五. 安装图和接线图

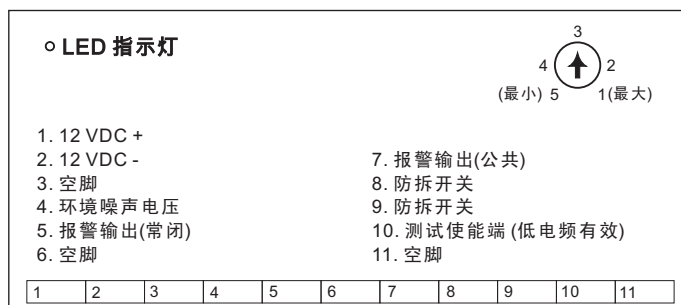
安装顺序:

1. 先将底板用膨胀螺丝固定在金库的墙体上, 安装一定要牢固, 否则会影响探测效果。
2. 然后再将振动探测器用螺丝固定在安装背板上(如图一)。



(图一)

3. 再按图二所示, 将振动探测器的报警输出信号: 公共信号和常闭输出正确接入报警主机。
4. 调试完毕后, 安装外罩和不锈钢装饰条。



(图二)

六. 测试

在调试时可以先不安装盖板。正确联通线路, 接通电源, 此时, 指示灯闪烁, 按表中的指示方法。

| | | |
|-------|--|--|
| 测试方法一 | | 短路1、2脚, 启动内部测试功能, 30秒内探测器将报警, 指示灯由闪烁到灭的过程。说明探测器的内部电路功能正常。注意: 要启动这个功能前, 必须将10脚接地。 |
| 测试方法二 | | 断开1、2脚, 用螺丝刀在安装地板的边缘轻轻连续划动30秒或者用铁锤在ATM机外壳附近敲击, 指示灯由闪烁到熄灭, 表示报警正常。 |

※ 若使用测试方法一, 测试结束后一定要断开10脚与负极的连线, 安装好盖板测试结束。

七. 灵敏度旋钮设置

探测器上电后指示灯闪烁, 表示工作正常。当ATM存取款时或环境干扰过大时, 指示灯会常亮, 可能会出现误报警, 应逆时针调节灵敏度旋钮从最大到最小直至指示灯由常亮变闪为止。此时测试4脚与2脚之间的电压应为0V。