

# TMS SDC002 VibeAlarm

## Quick Start Guide

This guide is intended to give the user a quick reference to the setup and operation of an SDC002.

### Materials Checklist:

- SDC002 VibeAlarm
- User interface software
- RS-232 Cable (kit option only)
- Accelerometer (kit option only)

### Hardware Setup:

Table 1. Description of SDC002 Terminals.\*

Terminal #	Description
1	24V Positive
2	24V Ground
3	RS-232 TXD (Brown)
4	RS-232 RXD (Red)
5	RS-232 GND (Green)
6	Remote Reset
7	Ground
8	4-20mA Output
9	Alert Contact
10	Alert Contact
11	Ground
12	Alarm Contact
13	Alarm Contact
14	Monitor Output
15	Sensor Ground Lead
16	Sensor Signal Lead

\*Valid for serial numbers 21 and up.

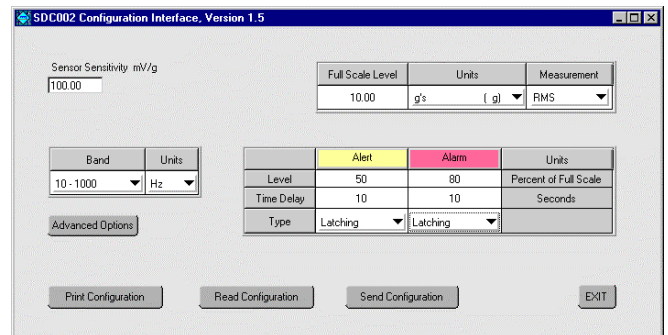
Connect a 24V DC power supply as described in Table 1. After a few seconds, the green "OK" LED should light up, and signal monitoring should begin. If there is a sensor connected, the green "SENSOR" LED will light. This light will go out if the sensor is disconnected. The unit is pre-configured to measure acceleration in a 10 Hz – 1000 Hz band, in units of g's RMS, with a full scale level of 10 g's, and alert and alarm levels of 50% and 80%, respectively.

### Configuring the SDC002 unit:

The host configuration software is supplied on two 3.5" floppy disks. To install, insert disk 1 and run setup.exe. Once the user interface is installed, the program group "SDC002" will appear in your Start menu. An "uninstall" utility is provided.



SDC002 VibeAlarm



SDC002 Configuration Interface Window.

Numeric fields may be edited by double-clicking, while pull-down menus are opened with a single click. Set the fields as desired; then press the Send Configuration button. Be sure the RS232 cable is properly connected. When prompted by the user interface, press the black "Reset" button on the SDC002, to interrupt its signal monitoring operation and prepare it to receive the new configuration through RS232. When the user-interface reports "Success", the SDC002 will begin operation with the new configuration. The SDC002 will retain its configuration even after power is disconnected. The configuration may be changed at any time simply by repeating the configuration procedure.

**Main Settings:**

**Alert and Alarm Levels:** Vibration in excess of the configurable *Alert and Alarm Level* will light the Yellow and Red LEDs, respectively, on the front panel and close the Alert and Alarm Relays, respectively.

**Band:** The SDC002 digitally band-pass filters the accelerometer signal, using user-specified corner frequencies.

**Full Scale Level:** The *full scale level* is entered in the units selected by the user. The alert and alarm levels are specified as a percentage of this full scale level. This parameter also specifies the full-scale level of the 4-20 mA current loop output.

**Latching vs. Momentary:** If *latching* alarms are specified, the alert or alarm outputs, once triggered, will remain active until the SDC002 is reset. If *momentary* alarms are specified, the alert and alarm outputs are deactivated as soon as the vibration levels fall below the alert or alarm levels.

**Time Delay:** The *time delay* is provided for the purpose of preventing false alarms. The alert and alarm outputs will not be triggered until the condition has been observed for at least the duration of the time delay. The actual response time of the SDC002 alert and alarm outputs may also be limited by the update rate of the measurement, which varies according to the configuration. The alert or alarm condition must be observed at least twice consecutively before the outputs are triggered.

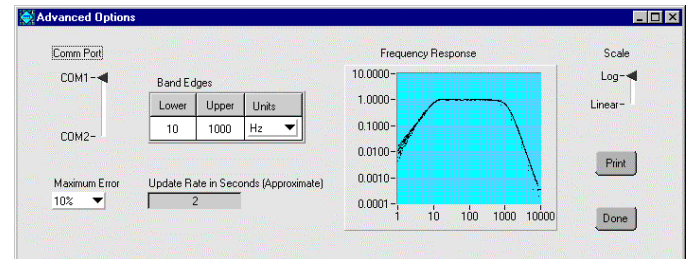
**Other Terms:**

**Monitor Output:** The raw, buffered sensor signal is provided on the front panel BNC as well as on terminal 14.

**Reset:** Press the black reset button on the front panel, or briefly ground the Remote Reset terminal to reset the VibeAlarm.

**Advanced Settings:**

To enter the Advanced Options window, click “Advanced Options” from the front panel or select “Other” from the Band pull-down menu.



*Advanced Options Window*

**Band Edges:** From the Advanced Options Window, the user may choose any frequency band within the limits of the device. If an invalid band is selected, the error message will offer the nearest allowable band.

**Maximum Error:** There is a passband ripple in the frequency response due to the characteristic of the digital bandpass filter. To reduce the ripple, more “taps” can be used, but this requires a greater computation time. Thus, there is a tradeoff between the maximum error and the update rate of the output. The user-specified *Maximum Error* is the maximum gain at the peak of the ripple.

**Frequency Response:** The theoretical frequency response is shown here, according to the frequency band, number of integrations, and maximum error selected by the user. If velocity or displacement measurements are selected, the graph shows the devices response to a given velocity or displacement signal amplitude, not the response to a given acceleration amplitude, although the sensor is assumed to be an accelerometer.

**Update Rate:** The update rate of the measurement is affected by the selected number of integrations and frequency band. An estimate of the update rate is provided here. To reduce the update rate, use fewer integrations, by measuring acceleration instead of velocity or displacement, and a narrower frequency band, either by lowering the upper band edge or raising the lower band edge.

**Available Options:**

- SDC002:** VibeAlarm, selectable 2 Hz to 20 kHz band, with 4-20 mA and solid state relay outputs. Includes setup software.
- SDC002- PS24P:** AC Power Supply for SDC002 VibeAlarm, 24 Volt universal supply, pigtail termination.
- SDC002- RS23210:** RS-232 Cable connects SDC002 VibeAlarm to PC, pigtail to DB9, 10ft.
- SDC002-Kit:** VibeAlarm including sensor, RS-232 cable, and setup software.
- SDC002-6PAK:** Qty 6: SDC002 VibeAlarms and 100 mV/g sensors.  
Qty 1: RS-232 cable and setup software.

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For additional information and answers to questions about the SDC002 VibeAlarm, contact The Modal Shop, Inc. at 800-860-487 or 513-351-9919, 9 a.m. to 5 p.m. EST. If it is more convenient, fax your questions or comments to The Modal Shop, Inc. at 513-458-2172 or email our sales staff at [sales@modalshop.com](mailto:sales@modalshop.com).

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