

SCM700 Seismic Configuration Manager User Manual

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Introduction

Universal programmable seismic detector, 700 Series

The VV700/VVS700 is a fully digital seismic detector using a microprocessor that provides 100% digital signal analysis. Consequently the detector is completely adaptable for all types of applications without compromising detection ability. As the detector is programmed on site, it can be adapted to the environment and eliminate false alarms. With this new technology, the detector can accommodate several different signal analysis programmes in the same hardware where previously only one existed. This makes the 700 Series a fully universal detector suitable for all known applications like safes, vaults, vault doors, ATM's, night safe deposit boxes, weapon stores, etc..

The seismic detector reacts to the characteristic vibration patterns of all breaking-and- entering tools, such as hammers, drills, diamond saws, hydraulic pressure tools and thermal tools, such as welding torch and thermal lance. It can sense vibrations that occur within a 3 to 14 meter radius of where they are mounted, depending on the material and design of the protected object.

Seismic Configuration Manager 700 (SCM700)

The Seismic Configuration Manager 700 (SCM700) is a software program for the programmable seismic detector VV700/VVS700. With this program you can adapt the seismic detector to all the different types of objects that you want to protect. You have 100% flexibility with only one detector that you can program to apply to different materials, environments, etc.

The program is easy to install on your laptop. It gives you access to many new features, such as background signal levels, verification of the detector settings, etc., to help avoid false alarms and to achieve the highest performance in signal detection.

What's new in version 2.0

The main addition in v2.0 is a feature called Parameter Change Tracking. The user is free to activate this feature or not but once it is activated, it cannot be deactivated anymore.

Through this feature, changes to any of the user programmable parameters can be traced at all times. Whenever one or more parameters have been changed, the detector will store which parameters have been changed, who has changed them and when they were changed. The release form plays a critical role in the Parameter Change Tracking, as this printed form will include all current and all previous parameter settings.

This feature is 100% backward compatible. This means that it can be activated on all VV700/VVS700 detectors, as well as on all VV700/VVS700 detectors already in the field. For more information, see "Parameter change tracking" on page 35.

Remote attenuation (sensitivity) can now be timed. With this feature active, whenever the remote attenuation pin is activated, the sensitivity of the detector will only be reduced for a certain period of time, independent of the status of the remote attenuation pin after the time has elapsed. This feature can be used only with detectors that have a firmware version of 8 or higher. For more information, see “Remote attenuation” on page 14.

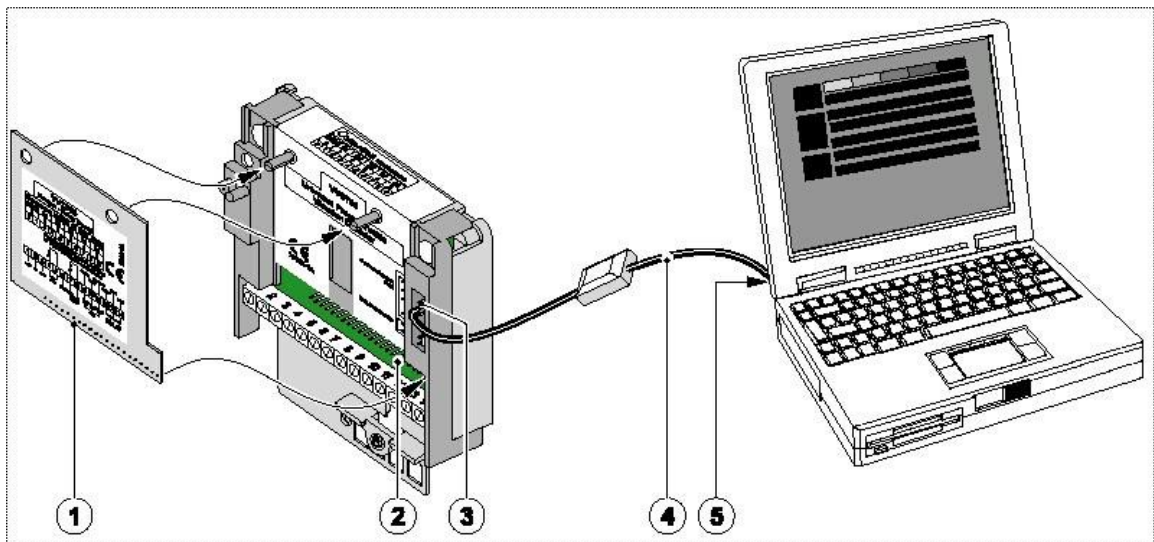
Getting started

What you will need

As well as the VV700 programmable seismic detector and the SCM700 program, you need a configuration cable VVI740 to be able to communicate between the detector and your laptop. A serial communication port, RS-232, is required on your laptop.

The programmable seismic detector lets you add customised plug-in boards. The plug-in board connector complies with the IEC standard 839-2. When the detector is installed in an application, there must be a plug-in board connected. The plug-in board determines the functionality at the screw terminals of the detector. For available plug-in boards, contact your distributor. A plug-in board is not required to communicate between the detector and the SCM700 program.

- **VV700/VVS700:** Universal programmable vibration detector
- **SCM700:** "Seismic Configuration Manager 700" software
- **VVI740:** Configuration cable
 - or **VVK700:** Configuration starters kit. Consists of the configuration cable (VVI740) and the configuration software (SCM700).
- **VVI760:** Form A relay board
 - or **VVI770:** Form C relay board



The programmable seismic detector must have a plug-in board (1) connected to the detector. Connect the plug-in board to the detector header (2). Use the configuration cable VVI740 (4) to enable the detector and your computer to communicate. Wire the 5- pole connector on the VVI740 to the communication port of the detector (3) and the 9- pole connector to the serial port (RS-232) of the computer (5).

Installing the software program

The Seismic Configuration Manager 700 (SCM700) is supplied on a CD-ROM. The program works on Windows 98, NT, 2000 and XP. If you already have a previous version of the SCM700 program installed on your computer, this version must be uninstalled before installing a new version. See “Uninstalling a program version” below.

Place the CD-ROM in the drive and wait at least 10 seconds. The installation program “Setup.exe” runs automatically. Follow the instructions on the screen and enter the information requested. You should now be able to see the SCM700 icon on your desktop.

Double-click to run the program. See also the instructions included on the SCM700 CD- ROM.

Uninstalling a program version

If you already have a previous version of the Seismic Configuration Manager 700 (SCM700) installed, please uninstall this version before you install an updated program version. Select <Start>, <Settings>, <Control Panel>, <Add/Remove Programs> and remove the old SCM700 version you have.

The system view

The program is Windows based and you will recognise the layout with pull-down menus in the menu bar and in some boxes. You reach all features and functions through the menu bar at the top. Icons represent special functions, which can be activated by a mouse click. A commando line at the bottom of the screen informs you about required actions and already selected settings.



Available functions are an “Eraser” that will empty/clear the boxes or clear the detection channels.



At the bottom right corner of the program there is a “Return” button that returns you to the previous window or to the pause screen.

Setting up the system

The first time you use the configuration program SCM700, set up the system according to your requirements. The settings will be stored in the program so you only have to do this once. Start the program and select <Setup> in the menu bar. Several options become available that allows you to set up the software for your needs.

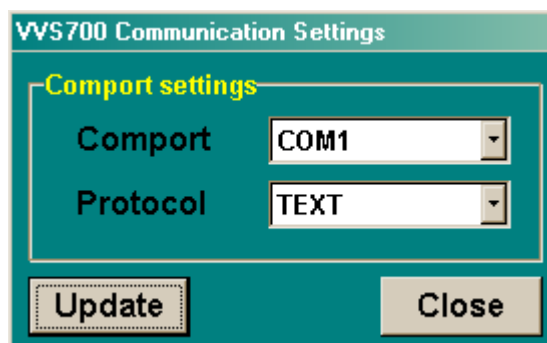
Language and security approvals



By default the software starts in English. Under <Setup>, <Languages/Approvals> in the menu bar you will find a list with the following languages available for this program; English, Dutch, German, Swedish, Danish, Italian, Spanish, French, Norwegian and Polish. Select one language that you want the program to use in the future.

If you have any special approval requirements for your market, you can also choose between the following approval standards; NFA2P, VdS, IMQ, INCERT, SBSC, Skafor, CAPP, FG, MABISZ and UL/ULC. Selecting an approval will assure that all the selected models are configured with approved characteristics and sensitivity. Please note that some of the settings can be automatically changed to meet the selected approval requirements. Click <Update> after you have made your changes. If no approval standard is required select <None>. The commando line at the bottom of the screen will confirm your selected approval standard.

Communication/Comport settings



Under <Setup>, <Communication> select the comport setting that is required on your computer. Click <Update> after you have made your changes. Default COM1 is selected. Communication between the detector and the PC requires the following settings:

- Comport: COM1, COM 2, COM 3,
- or COM 4 (depending on your computer)
- Protocol: TEXT or AUTO

Communication status

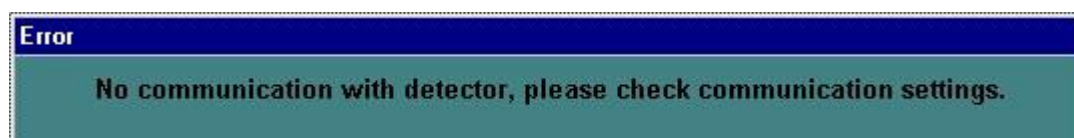
You can always see the communication status between the detector and your laptop at the Communication Status indicator in the bottom right corner on the screen. If you have no communication, check that the configuration cable is properly connected to both detector and laptop and that you have 12 VDC to the detector (screw terminal 1 and 2).

Green light = communication OK

Red light = no or lost communication



When the program is started with no detector connected, there is a communication error message. When the communication is available, this message disappears automatically and the communication status indicator turns green.



The next time communication is lost there will be a communication error message that will *not* disappear automatically. This error message needs to be confirmed before the program tries to set up the communication again. This assures that the operator is aware of the communication lost and knows that the previous tests are invalid.

When communication is not achieved, select <Setup>, <Communication> and change the comport setting. Check if the other variables match with the settings mentioned in "Communication/Comport settings" on page 5.

Configuring the detectors

The programmable seismic detector is supplied default programmed. This results in a (configuration) fault signal. Follow the configuration instructions to program the detector for your application.

Configuration window

When the Configuration window is opened, by selecting <Configure> in the menu bar, SCM700 will automatically fetch all parameters from the detector that is currently hooked- up with your PC/laptop. Once the parameters have been successfully uploaded from the detector, a pop-up window shows “EEPROM uploaded successfully”. Close this window by clicking <OK>.

The screenshot shows the SCM700 Configuration window. The menu bar includes File, Configure, Verify, Analyse, Tools, Setup, and Help. The main interface is teal and contains the following sections:

- Application Setting:** A dropdown menu showing '700 Vault and Safe Application'.
- Plug-in Board:** A dropdown menu showing 'RELAY BOARD'.
- Sensitivity:** A dropdown menu showing 'Custom' and a slider control set to '85%'.
- System Test:** A dropdown menu showing 'NONE'.
- Accessory Input:** A dropdown menu showing 'DISABLED'.
- Alarm Pulses Counter 1:** A slider control set to '10'.
- Alarm Pulses Counter 2:** An empty slider control.

Below these settings is an 'Optional Settings' button. At the bottom of the main area is an 'Actions' section with four buttons: 'Upload from detector', 'Reset application values', 'Save to file', and 'Download to detector'.

The status bar at the bottom of the window displays:

- Approval: NONE
- Detector Readings
- Communication Status: COM1
- A small icon of a computer monitor.

There are two ways to continue:

- Select a “Pre-programmed” detector model from the <Application setting> menu box. All variables will show the default model settings.
- Select <Reset application values>. All variables will show the VV700 default settings. The selected variable can be programmed into the detector by selecting <Download to Detector>. You can save the detector settings under <Save to File>. These settings are stored on the hard disk of the computer.

Basic configuration actions (Five-step configuration)

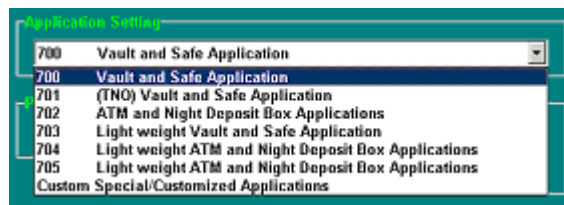
The following (minimal) steps are required to program a detector:

1. Select <Configure>.

2. Select a <Application setting>.
3. Select a <Plug in board>.
4. Change the sensitivity <Sensitivity>, if necessary.
5. Press <Download to Detector>. The detector is now ready for use.

Application setting

In the <Application setting> box select the detector type that is best suited for your application. All 700 detector types listed have pre-programmed application settings. These settings are approved by the approval agency selected in <Setup>, <Languages/Approvals> (see “Language and security approvals” on page 5).

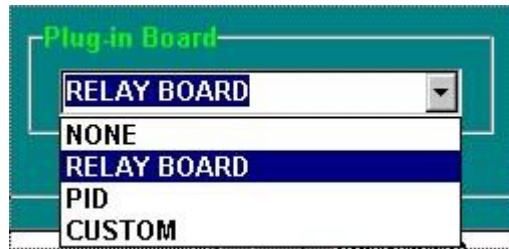


- 700 Vault and Safe Application
Protect any solid structure like vaults, vault doors, safes, weapon cabinets, etc.
- 701 (TNO) Vault and Safe Application
Protect vaults and safes with increased sensitivity in accordance to the TNO norm.
- 702 ATM and Night Deposit Box Application
Protect Automatic Teller Machines (ATM's), night safe deposit boxes and any object that creates vibrations and knockings in normal operation.
- 703 Lightweight Vault and Safe Application
Protect lightweight safes with adjustable frequency and amplitude scale.
- 704 Lightweight ATM and Night Deposit Box Application
Protect ATM's and night safe deposit boxes of lightweight material
- 705 Lightweight ATM and Night Deposit Box Application
Protect ATM's and night safe deposit boxes of lightweight material
- CUSTOM Special/Customised Application
This option gives access to Customer Model files (*.cmf). When the operator saves a detector setting (see Section 4.1.11) it is possible to recall (load) this setting with this option. Select “CUSTOM” and a window appears. This window shows all CMF-files available.

Note: All CMF-files are variants of the approved application settings. Therefore any CMF-file that can be generated by the operator will be an approved application setting.

Plug-in board

Select one of the options in the pull down menu <Plug-in Board> that correspond to the plug-in board being used:



- Relay board

- Form A relay board (VVI760)
- Form C relay board (VVI770)

- PID transponder

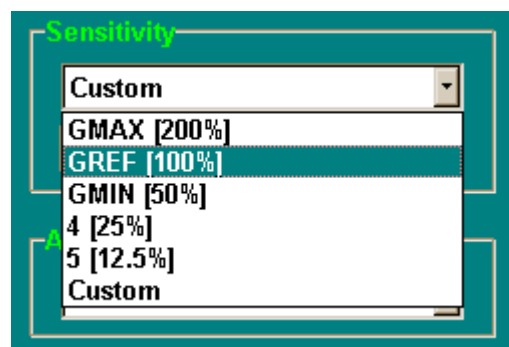
The plug-in connector applies to the IEC standard 839-2. Any third party transponder can be used. Contact your local distributor for additional information.

- CUSTOM

For customised hardware solutions, contact local distributor for information.

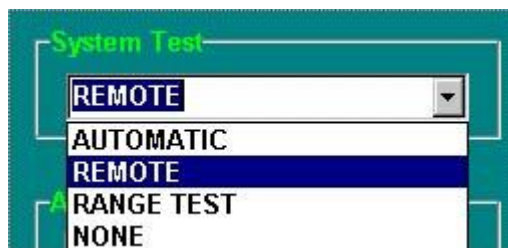
Sensitivity

Set the sensitivity by selecting one of the options in the <Sensitivity> box. There are five predefined values, with any two subsequent steps 6 dB apart. The default setting is GREF (100%). Depending on the application, in fact depending on how easy or difficult it is for the acoustic wave to progress through the material of the walls of the vault/ATM/night deposit box/... , this value needs to be increased (increasingly difficult) or decreased (increasingly easy). In case none of the preset values is applicable for your application, you can select the <Custom> option from the pull-down menu and select any value between 200% (GMAX) and 12.5%.



System test

There are three test-modes available in the Configuration window. Select the test mode in the <System Test> box that is best suited for your installation:



- Automatic Test

The detector performs automatically five self-tests every 24 hours. No external action is necessary. The test interval times are randomly selected by the SCM700 program and downloaded in the detector. This self-test requires a Test Transmitter installed in the detector. The detector drives the test transmitter internally. When vibrations are detected the self-test is successful and no action is taken. If the detector does not sense any vibrations, the fault output is activated. The fault stays activated until the next *successful* test.

- Remote Test

This self-test requires a Test Transmitter installed in the detector. The test is controlled externally, manually or by the control panel. Refer to the plug-in board manual on how to activate the self-test manually.

When the self-test is activated, the detector drives the internal test transmitter. When vibrations are detected, the self-test is successful and the alarm output is activated. If the detector does not sense any vibrations, the fault output is activated. The fault stays activated until the next successful test.

- Range Test

This self-test requires no Test Transmitter. Vibrations are generated with an external Hand Held Tester (VT610P) or the more powerful Range Tester (VT612). The test is externally controlled, manually or by the control panel. Refer to the plug-in board manual how to activate the self-test manually.

When the self-test is activated, the detector waits until a vibration is detected. If the detector does not detect the vibration, the fault output becomes active (low). If the vibration is detected then the fault output will be non-active (high). When vibrations are detected the self-test is successful, and the alarm output is activated when one of the integrators/counters reach the alarm criteria. If the detector does not sense any vibrations no action is taken. The alarm signal will reset after "alarm latch time" is expired (see "Alarm latch time" on page 13).

- Application area

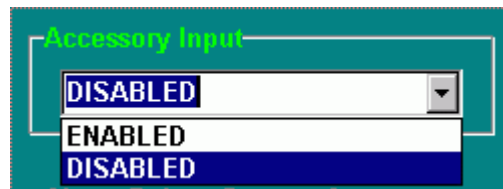
This test is normally used to simultaneously test more than one detector in an installation. For example, an object is protected with four detectors. All detectors are configured with "Range test". The control panel activates the test mode (parallel line for all detectors) and activates the Range Tester. After

a pre-determined time, all detectors should detect the vibrations and report it to the panel by activating the alarm output.

Accessory input

The programmable seismic detector has an auxiliary input (screw terminal 3). This input acts like an external tamper switch. When this input is enabled, an alarm signal will be activated. This input can be used to connect one of the accessories available for the 700- series.

If you want to install the detector together with either a Day/Night Plate or a Keyhole Protection Kit, you must select <Enabled> in the <Accessory Input> box (default setting is "Disabled").



Alarm pulses counter 5

The application settings 700 and 703 have a pulse counter channel feature. Select the number of actual pulses that you want the detector to detect before it triggers an alarm. You can choose between 2 to 25 pulses. Default setting is five pulses. This detector box cannot be changed when other detector types are selected.



Alarm pulses counter 6

The application setting 701 has a special pulse counter channel feature, which is in accordance with the TNO norm. Select the number of actual pulses that you want the detector to detect before it triggers an alarm. You can choose between 2 to 25 pulses. Default setting is five pulses. This detector box cannot be changed when other detector types are selected.



Uploading from the detector

As described in "Configuration window" on page 7, each time the user enters the Configuration window all parameters are automatically uploaded from the

hooked-up detector. After the parameters have been successfully fetched from the detector, a pop-up window displays “EEPROM uploaded successfully”. Close this window by clicking <OK>.

After an upload, the command line (left bottom corner of the screen) will mention “Detector readings”. Consequently you can easily determine all current settings on any detector.



Resetting application values

If you click the box <Reset application values> the program automatically chooses a specific setting. This default setting is there to help Technical Support and to give you and the Help Desk the same starting point. The default setting is that of the 700 application setting.



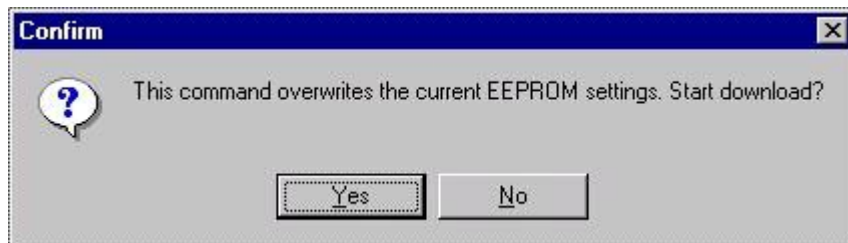
Save to file

The operator can save a particular setting. If there are several detectors, which have specific settings that differ from the default application settings, these settings can be programmed and then saved on the hard disk of the PC. These files are called “Customer model files” and will have the extension *.CMF. To save the settings on a disk, select <Save to file>. Enter a filename and select <Save>. This file can be loaded with the option <CUSTOM> in the <Application setting> box (see “Basic configuration actions (Five-step configuration)” on page 7).

Downloading to the detector

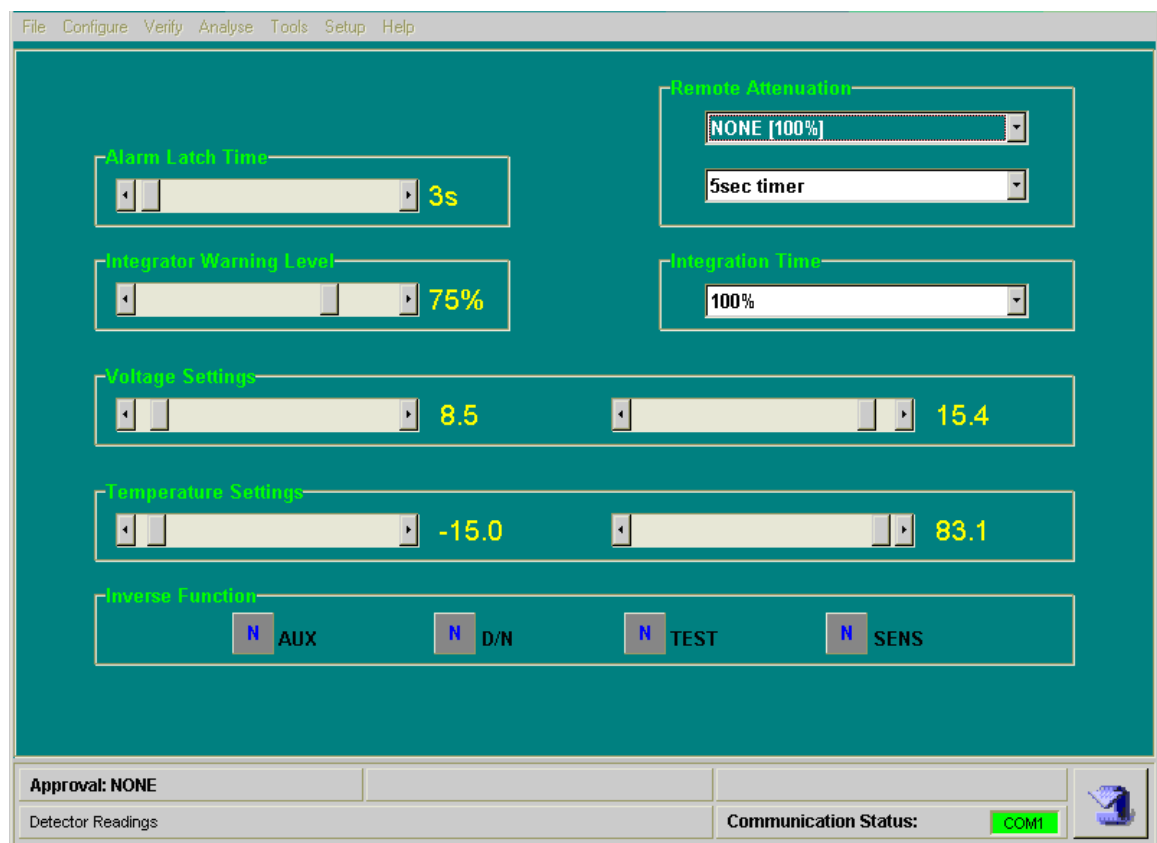
When all the settings for your installation are selected, click the <Download to detector> box to save the settings into the detector. The program notifies you that the settings of the connected detector will be lost and replaced with the settings that are currently selected in the SCM700 program. The following message appears: “This command overwrites the current EEPROM settings, start download?” select <Yes>. When this message is acknowledged, a “Download progress bar” appears, which shows the progress of the downloading.

All changes made to the settings in both Configuration window and under <Optional settings> are downloaded to the detector by clicking the box <Download to detector>.



Optional settings

Select <Optional settings> in the Configuration window and you can change even more settings to further adapt the detector to your specific installation. These settings are optional. If you choose not to do any changes in this window, the program automatically selects the default settings shown in the adjacent window. All setting changes made under <Optional settings> downloaded to the detector by clicking the box <Download to detector> in the Configuration window.



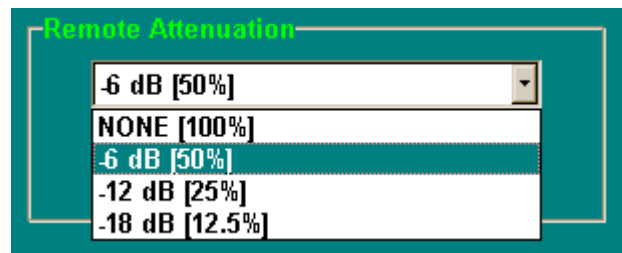
Alarm latch time

The alarm latch time is the time that the alarm output is activated after an alarm condition. When the time has expired, the alarm output returns to a “NON-alarm” state. The communication panel of the security system will latch the alarm signals until action has been taken. In the <Alarm Latch Time> box, you can change the alarm latch time from 0 to 120 seconds. Default setting is 3 seconds.



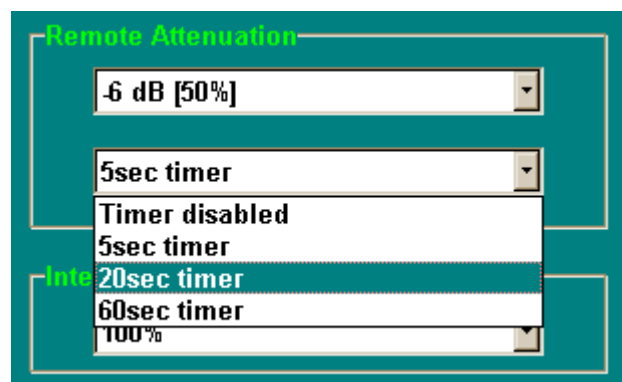
Remote attenuation

The Remote Attenuation function prevents false alarms when you want to protect objects that generate internal vibrations during normal operation, for example in case of an Automatic Teller Machine (ATM). By selecting one of the options in the <Remote attenuation> box, you can (temporarily) reduce the sensitivity by (externally) activating the “SENS”-input (terminal 14 – Please refer to the section on the plug-in board). Each two subsequent predefined settings from the drop-down menu are 6 dB apart. The default setting is <NONE (100%)>, which means that sensitivity can never be reduced regardless of the status of the “SENS”-input.



When the associated timer is disabled (<Timer disabled>), remote attenuation is controlled by the status of the “SENS”-input. However, when the timer is set to any value other than <Timer disabled>, then remote attenuation is only active for a certain period of time (=the selected time) starting at the active edge of the signal on the “SENS”-input, regardless of the status of the “SENS”-input at the moment the selected time has elapsed.

Note: The timer function is only available from firmware version V8.0.



Note: Application settings 702 / 704 / 705 have specially designed integrator channels for ATM applications that take into account the characteristic signals produced by this type of equipment. Only use the remote attenuation feature when default application settings are not applicable.

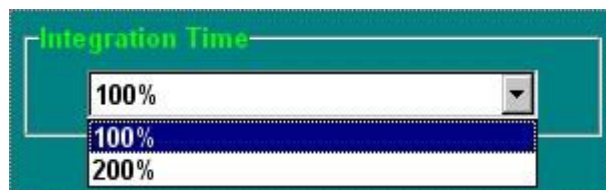
Integrator warning level

In the <Integrator Warning Level> box you can select when the detector should give a pre-alarm. You can select between 0-100 %. The default setting is 75%, which means that when the activated integration channels have reached 75% of their threshold the detector will give a pre-alarm as a warning. Please refer to the plug-in board manual to see if it supports warning signals.



Integration time

If you want to change the integration time (time-to-alarm), select <200%> in the <Integration time> box. It will now take approximately twice as long before the detector reaches the alarm threshold. Default setting is <100%>.



Voltage settings

The detector triggers a sabotage alarm if the voltage goes below or over the selected voltage settings. You can set the voltage between 8.0 V to 16.0 V. Default setting is 8.5 V to 15.4 V.



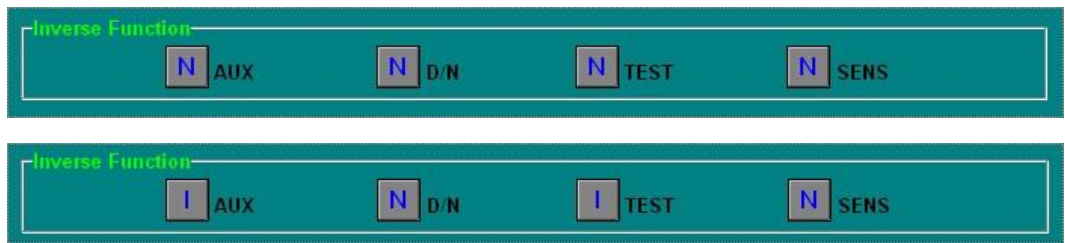
Temperature settings

The detector triggers a sabotage alarm if the temperature goes below or over the selected temperature settings. You can set the temperature between -20°C and +85°C. Default setting is -15°C to +83°C.



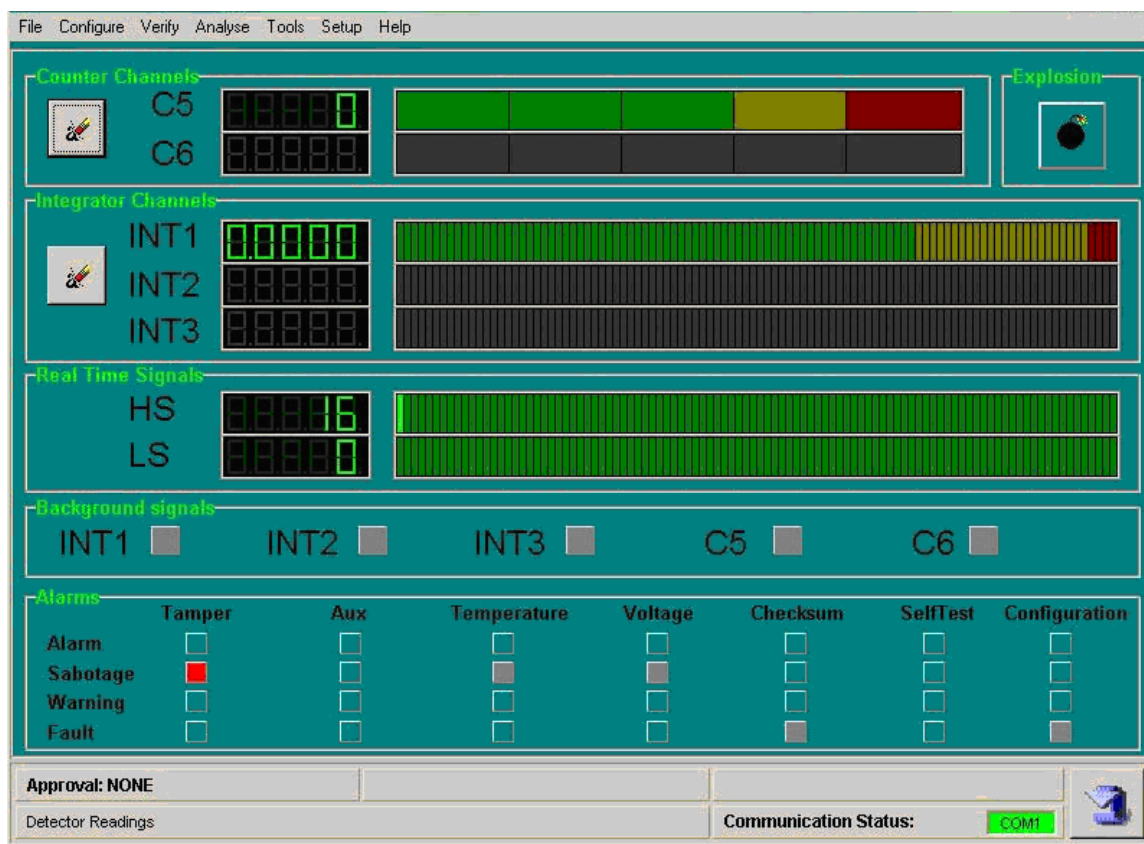
Inverse function

The inverse function makes four inputs/outputs polarity changeable on the detector; accessory input (screw 3), Day /night mode (screw 12), test transmitter input (screw 13) and remote attenuation (screw 14). To change the polarity, just click the <N> (Normal) or <I> (Inverse) box. This option is only available when the relay board is selected as a plug-in board. See "Plug-in board" on page 9.



Verifying the detector settings

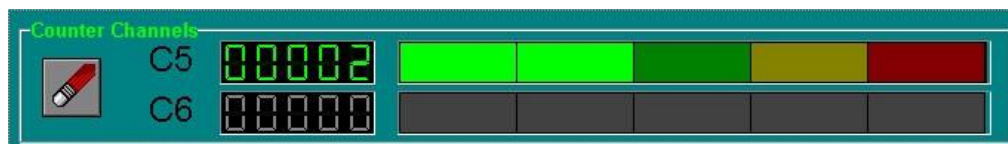
This window verifies the application settings downloaded to the detector in the Configuration window. You can adapt the detector to the object you want to protect by using this feature. If you test the detector installation by using a Hand Tester, you can see how the detector is reacting in real-time on manually applied vibrations. If the detector is too sensitive, return to the Configuration window and reduce the sensitivity to avoid false alarms.



Note: Do not forget to first download your changes in the Configuration window to the detector. Otherwise you will not see any changes in the detector's performance.

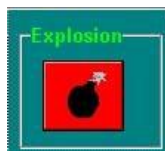
Counter channels

The Counter Channel only shows the activated channel depending on which application setting you have selected in the Configuration window. Counter channel 5 is activated when the application settings 700 and 703 are selected. Counter channel 6 is activated when application setting 701 is selected. When the detector detects a pulse, it starts to count (the blocks light up) until the detector has reached the alarm level. The counter channel that is not activated is grey scaled. The counter channel also looks different depending on the number of pulses selected. The yellow blocks show the warning area and the red block shows the alarm.



The picture shows the default setting for the detector type 700 with five pulses. Two pulses have been detected.

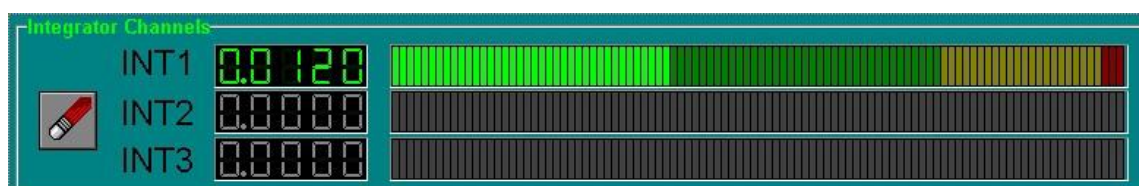
Explosion channel



The Explosion block will turn red when the detector is detecting an explosion.

Integrator channels

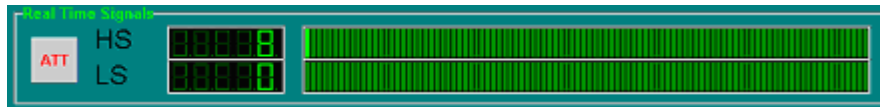
The Integrator Channels only shows the activated channel depending on which application setting you have selected in the Configuration window. Integration channel 1 is activated when application settings 700, 701 and 703 are selected. Integrator channels 2 and 3 are activated when application settings 702, 704 and 705 are selected. When the detector detects a vibration, it starts to integrate (the area lights up) until the detector has reached the alarm level. The integrator channel that is not activated is grey scaled. The integrator channel also reacts differently depending on which sensitivity settings and detection time selected in the Configuration window. The yellow block shows the warning area and the red block shows the alarm.



The picture shows the default setting for the application setting 700 with 75% warning level.

Real time signals

The Real Time Signal bars show the strength of the vibrations detected. When these signals become too strong, there is a risk of the detector starting to integrate and eventually triggering an alarm. The window shows two different detection signals. One signal applies to the high sensitivity (HS) channels, the other to the low sensitivity (LS) channels. The HS is used for the integrators and the pulse counter 6 and the LS is used for the pulse counter 5 and the explosion channel. Both channels are analysed and can trigger an alarm. It is recommended that you try to remove the source of ambient noise instead of reducing the sensitivity.



The attenuation indicator becomes visible on the verify windows while the attenuation is active. If attenuation is not active, or if the firmware version is less than 8, the indicator remains invisible.

Background signals

The VV700/VVS700 detector is designed to detect very weak signals (thermal lance attacks). If the detector is too sensitive, the detector may start to integrate due to background vibrations. External machinery, traffic, etc. can cause background vibrations.

If the background signals are too strong, the detector starts to integrate or count pulses. When the background signal indicators turn blue, the corresponding integrators and/or counters are activated and eventually will cause false alarms.

This means you must remove the source of ambient noise or adjust the sensitivity so that when it is in a quiet state (no external vibrations applied only “environmental” vibrations), the background signal indicators do not turn blue.



Alarms

The selection of events that can be detected by the detector is listed horizontally. A signal is generated when:

- Tamper: Combined tamper and pry-off.
- Aux: An event is detected on the auxiliary input (see “Accessory input” on page 11).
- Temperature: Maximum and minimum temperature limits exceeded (see “Temperature settings” on page 15).
- Voltage: Maximum and minimum voltage limits exceeded (see “Voltage settings” on page 15).
- Checksum: The settings of the detector are corrupted. The settings programmed in the detector are verified every 24 hours.
- Self-test: The self-test has failed.
- Configuration: When the programmable seismic detector leaves the factory it is default programmed. If the operator has not programmed the detector, a configuration error signal is generated.

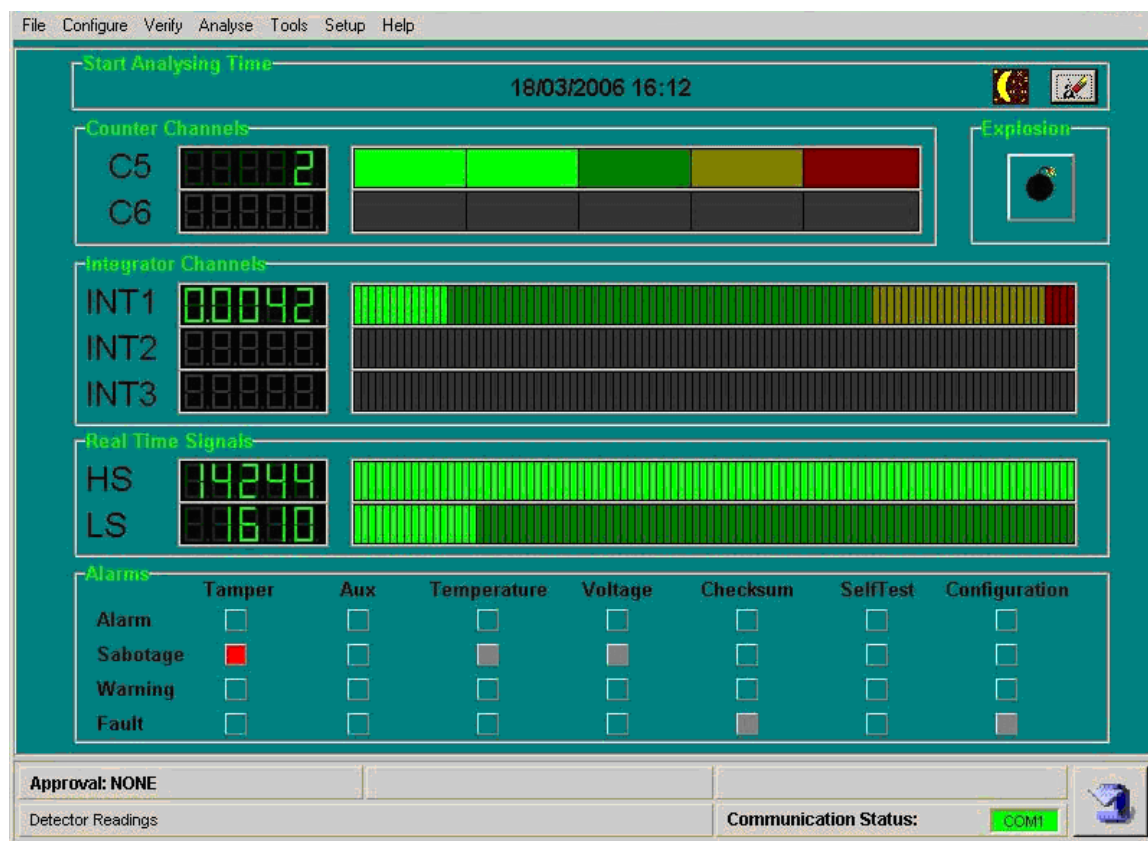
The selection of output signals is listed. The events can be directed to one of the four outputs: Alarm, Sabotage, Warning and Fault.

A grey indicator indicates that the event is selected. When the indicator turns red, the event is detected and signalled on the selected output. In the picture below Tamper, Temperature and Voltage events are signalled on the sabotage output.

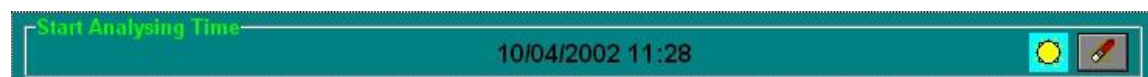
Alarm	Tamper	Aux	Temperature	Voltage	Checksum	SelfTest	Configuration
Alarm	☐	☐	☐	☐	☐	☐	☐
Sabotage	☒	☐	☒	☒	☐	☐	☐
Warning	☐	☐	☐	☐	☐	☐	☐
Fault	☐	☐	☐	☐	☐	☐	☐

Analysing the detector settings

The Analyse window memorises all peak signal values of the detector from the time of activation. Select <Analyse> in the menu bar to reach it. You can always access the Analyse window and reset the peak values using this icon .



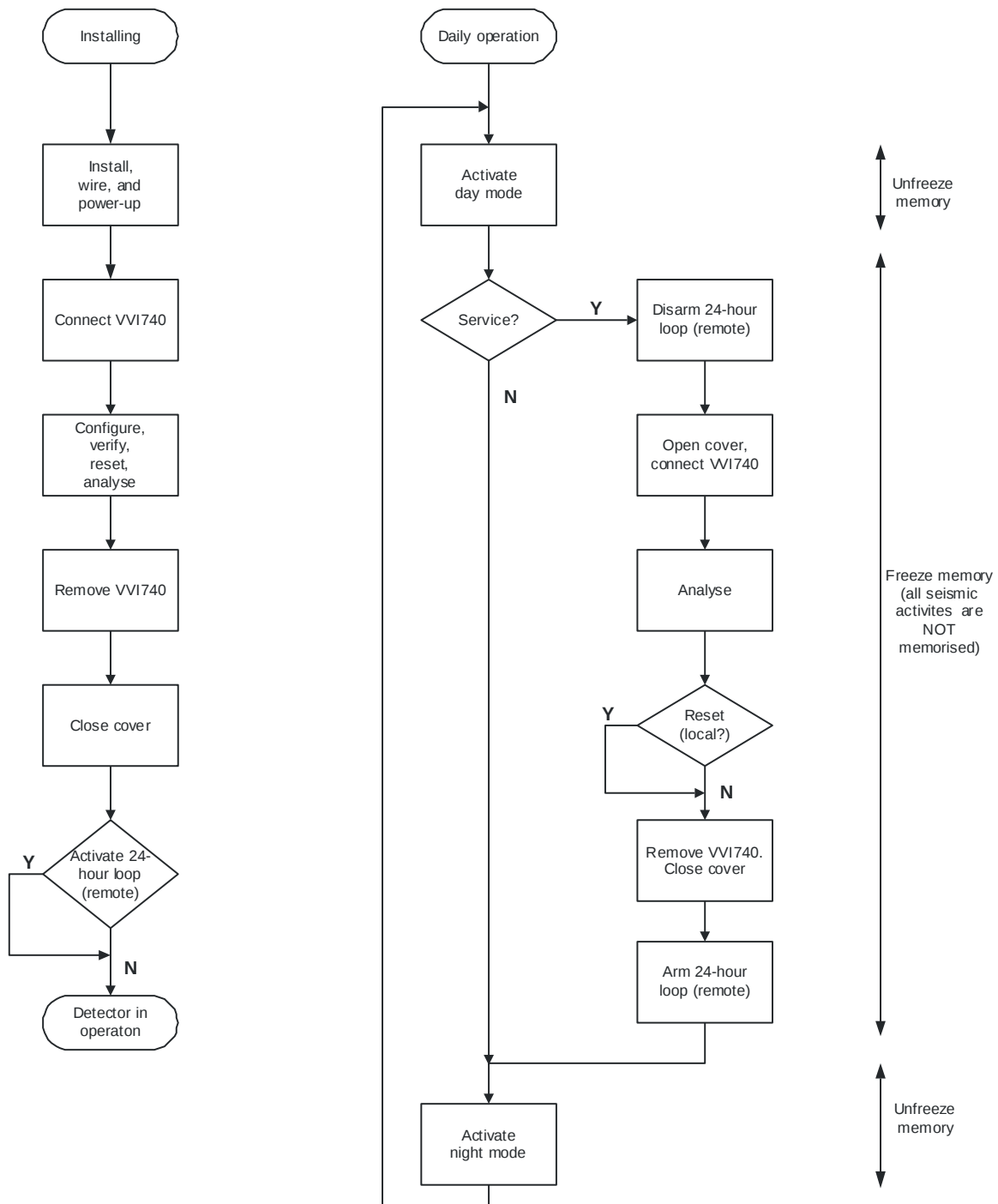
The Day / Night mode is linked to the Arm / Disarm function of the control panel. When the Night mode (armed) is activated, there will be a “moon” in the upper right corner. When the Day mode (disarmed) is activated, it will be a “sun”. To reset the time/date stamp, click the erasure button. The date/time stamp is stored in the detector’s memory. This “local” resetting of the Analyse window functions is independent of the Day / Night mode.



If the detector switches from Night mode to Day mode, the values/events are frozen (not reset). Events that occur when the detector is in Day mode are NOT memorised. This allows the installer to open the detector and read the memory content without changing the peak values.

Note: The 24-hour alarm loop needs to be disabled when the installer opens the detector in order to prevent a sabotage alarm being generated by the tamper switch when the cover is removed from the detector.

These (peak) signals are stored in the detector. The PC and the SCM700 software do not have to be connected to the detector in order to use this function. The analysed information is lost when the detector is powered down.



Advanced features

There are several advanced features under <Tools> in the menu bar that will help you optimise the installation and performance of the detector. There are also tools available for more detailed on-site performance measurements.

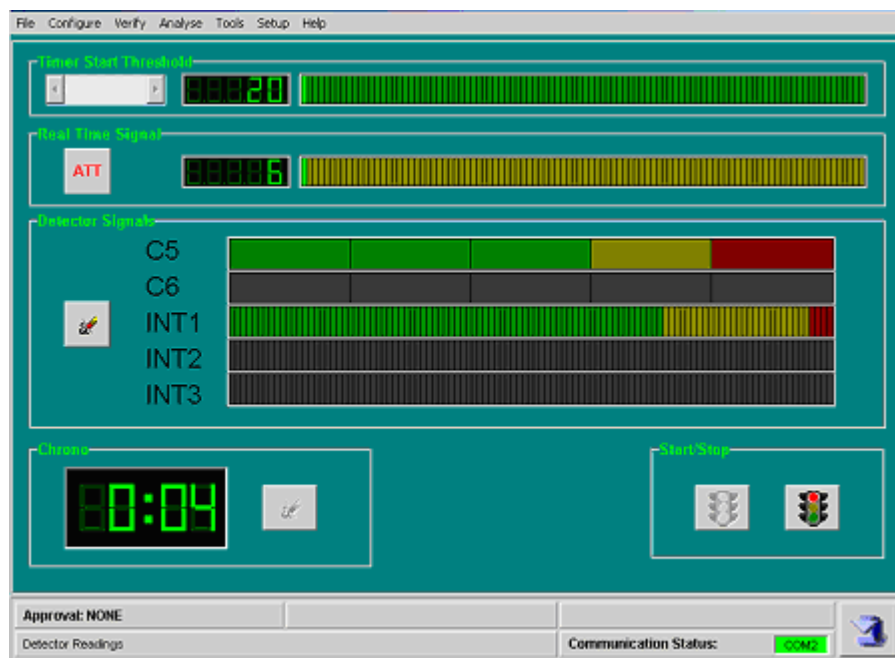
Timer

Select <Tools>, <Timer> in the menu bar. In the Timer window you can test the detector with a stopwatch.

The “Real Time Signal” bar shows the vibration strength as measured by the detector. This is the same signal as shown in the Verify window. With the “Timer start threshold” the operator can select a signal strength that corresponds to the real time signal strength shown in the “Real Time Signal” window. When the measured signal strength exceeds the threshold level (for example, caused by a Hand Held Tester), the "Timer" function is activated.

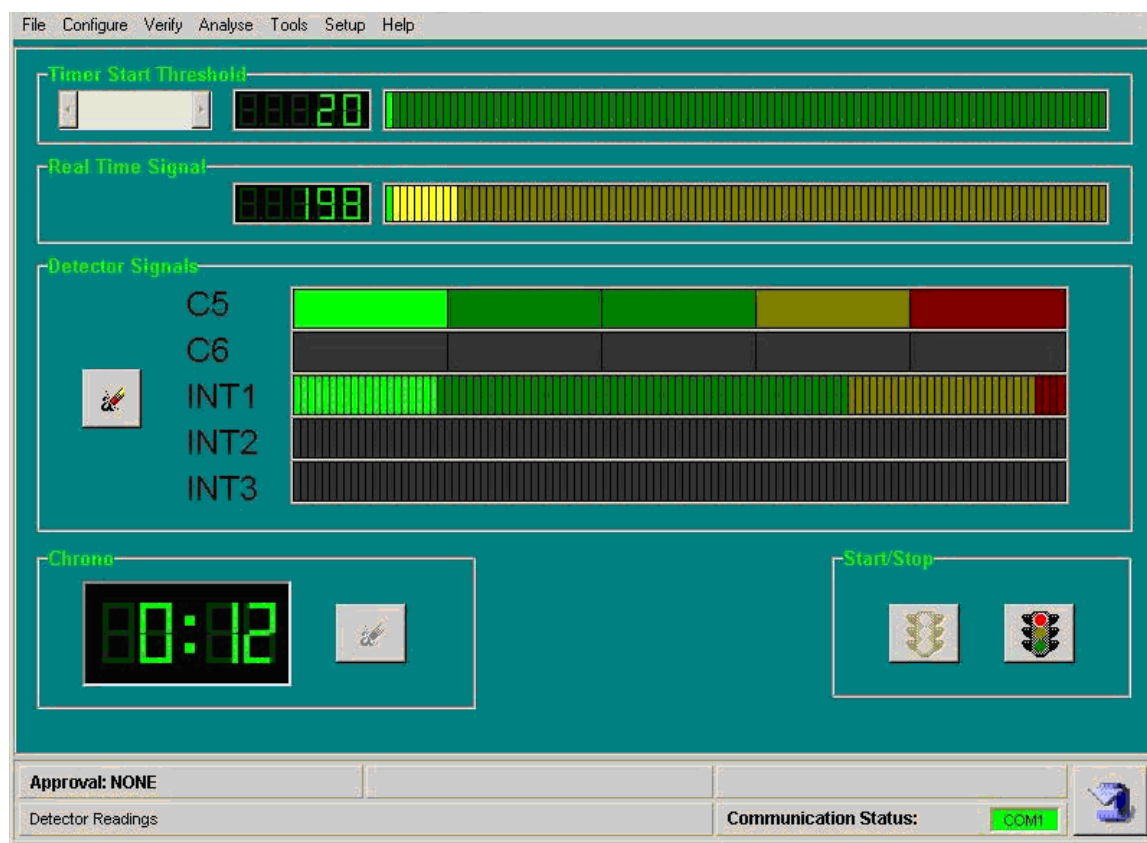
The attenuation indicator becomes visible on the verify windows while the attenuation is active. If attenuation is not active, or if the firmware version is less than 8, the indicator remains invisible.

All available integrators / counters can be watched during the test. Only activated signals are displayed (this depends on the “Application setting” selected in the Configuration window).



Start the test by clicking the green light in the <Start/Stop> box. The test is activated but the timer only starts when the “Real Time Signal” strength indicator exceeds the threshold level. Apply vibrations manually with a Hand Tester. The results of the applied vibrations are shown in the <Detector Signals> box. When the detector goes into alarm, the stopwatch automatically stops and you can easily see the “Time to Alarm”. If you are unhappy with the result, return to the Configuration window by selecting <Configure> in the menu bar and adjusting the

settings. Do not forget to download the changes by clicking the >Download to Detector> box.

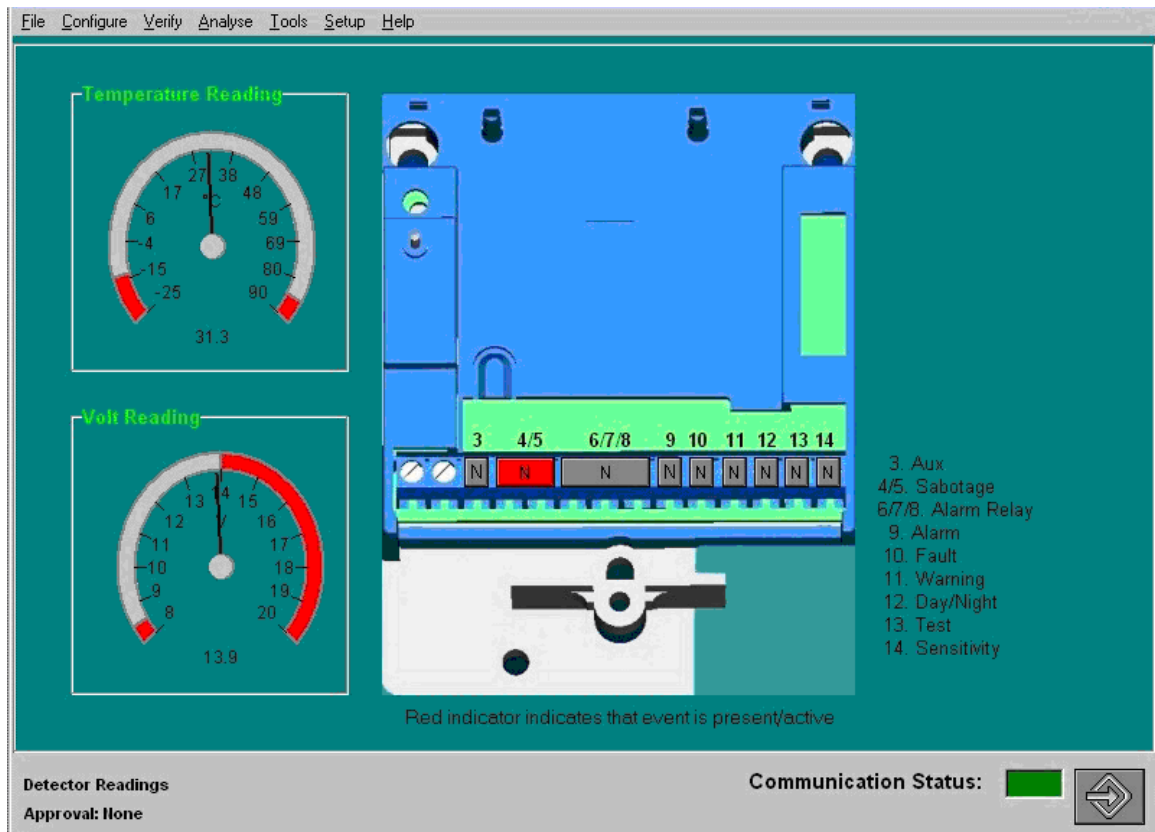


To stop the test before the detector triggers an alarm, click the red light in the <Start/Stop> box. If you want to clear all the boxes after the test, click the “Eraser” box.

Viewing I/O (Inputs/Outputs)

Select <Tools>, <View I/O> in the menu bar. The <I/O View Window> shows the actual status of the input and output signals in real-time. The simulation of these input / output signals depends on the selected plug-in board. The picture shows the simulation of the input and output signals when a relay board is selected as plug-in option. The red indicator shows that an event is present/active.

In the <Temperature Reading> box you can see the actual temperature of the detector and the temperature settings. If you want to change the temperature settings, see “Temperature settings” on page 15. In the <Volt Reading> box you can see the actual voltage and the voltage settings.

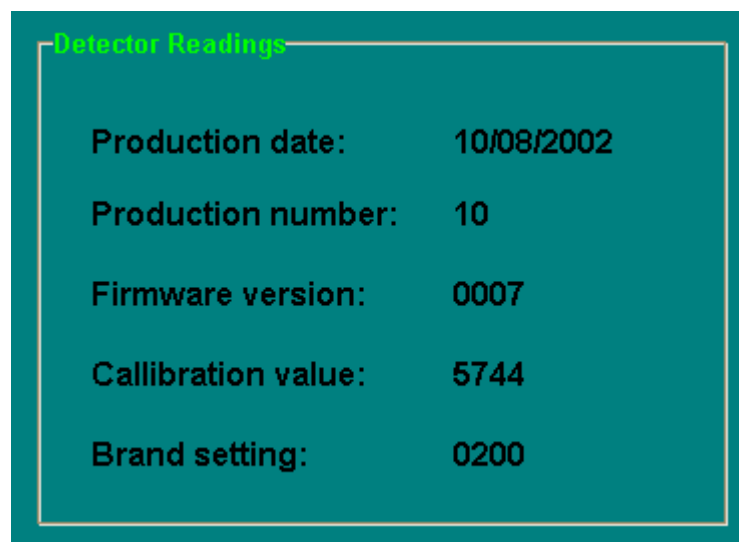


If you want to change the voltage settings, see “Voltage settings” on page 15.

Note: Temperature and voltage readings are approximately correct within a slight tolerance.

Detector info

Select <Tools>, <Detector Info> in the menu bar. The <Detector Readings> box provides information on the detector, such as production date, production number and the firmware version in the detector. This is the unique serial number for the detector.



Event logging

Event logging is a feature that logs all detector events in a log file. The PC and the SCM700 software need to be connected to the detector during the evaluation period. Events are defined as:

- Increase / decrease of pulse counters
- Increase / decrease of integrators with a “delta” of 10%
- The transition of integrators into warning area
- Alarm of integrators / counters
- Activation of output signals such as:
- Alarm
- Sabotage
- Warning
- Fault



This log-file (*.CSV) is supported by Excel. To activate event logging select <Tools>, <Event logging> in the menu bar. A <Save As> window appears. Select a folder and enter a file name. A mark in front of the <Event Logging> appears when it is activated. In the command line, the text “Event logging” alerts the operator that the event logging is activated. The program now automatically stores all activities from the activated channels in a log file. To stop the event logging, select <Tools>, <Event logging> again in the menu bar and the mark will disappear.

An example of the event log file is shown below.

DATE	TIME	ALARMS	SABOTAGE	FAULTS	WARNINGS	COUNT5	COUNT6	INT1	INT2	INT3	RTS1	RTS2
06/11/2027	10:11:28	0	0	0	0	0	0	0	0	0	6	0
06/11/2027	10:11:46	0	0	0	0	0	0	120	15	0	3480	140
06/11/2027	10:11:47	0	0	0	0	0	0	240	33	0	3488	156
06/11/2027	10:11:48	0	0	0	200	0	1	340	48	0	2224	150
06/11/2027	10:11:53	1	0	0	200	2	1	0	153	0	3772	314
06/11/2027	10:11:53	1	0	0	200	0	0	0	0	0	4288	410
06/11/2027	10:11:54	1	0	0	0	0	0	0	0	0	3330	144
06/11/2027	10:11:58	0	0	0	0	0	0	0	0	0	30	0
06/11/2027	10:12:00	0	0	0	0	1	0	73	11	0	286	76
06/11/2027	10:12:01	0	0	0	0	2	0	80	11	0	5888	2772
06/11/2027	10:12:01	0	0	0	0	2	0	120	17	0	86	132
06/11/2027	10:12:02	0	0	0	0	3	0	141	23	0	734	76
06/11/2027	10:12:03	0	0	0	100	4	0	169	28	0	6162	1994
06/11/2027	10:12:04	100	0	0	0	0	0	187	31	0	7154	4756
06/11/2027	10:12:04	100	0	0	0	0	0	0	0	0	42	2
06/11/2027	10:12:08	0	0	0	0	0	0	0	0	0	6	0
06/11/2027	10:12:18	0	0	0	0	1	0	456	66	0	6486	1382
06/11/2027	10:12:18	0	0	0	200	1	1	536	78	0	6716	1514
06/11/2027	10:12:18	0	0	0	200	1	1	576	84	0	6564	1188
06/11/2027	10:12:19	0	0	0	200	1	1	681	99	0	4340	308
06/11/2027	10:12:20	0	0	0	200	1	1	721	105	0	6980	2454
06/11/2027	10:12:20	0	400	0	201	1	1	781	114	0	6528	966
06/11/2027	10:12:21	0	400	0	201	1	1	901	132	0	5352	258

Below is the explanation of the codes used in the log file. If more than one event occurs at a time, the alarm codes are summed.

Index:					
	Alarms			Warnings	
	0	No Alarm		0	No Warning
	1	Alarm by Int 1		1	Warning by Int 1
	2	Alarm by Int 2		2	Warning by Int 2
	10	Alarm by Int 3		10	Warning by Int 3
	80	Alarm by Exp channel			
	100	Alarm by Counter 5		100	Warning by Counter 5
	200	Alarm by Counter 6		200	Warning by Counter 6
			Sabotage		
			0	No Sabotage	
			400	Tamper	
			1000	Voltage	
			0C00	Temperature	

Printing the release form

The release form is a document that shows all the settings of the detector when the programming is completed. It can be printed direct or saved to a file and should be signed by the installer. This document confirms the installation and the detector settings for the customer.

Print Release Form

Select <File>, <Print Release Form> in the menu bar. The document shows the following settings that you have programmed into the detector and detector information:

- The detector identity (Firmware version, production date, production number)
- Release form time stamp
- The parameter change tracking data: Who changed the parameters and when, program-counter, and date and time of programming
- The current and the previous parameter settings:
 - Application setting
 - Approval setting
 - Sensitivity setting
 - Remote Attenuation setting and setting for associated timer
 - Plug-in Board
 - System Test
 - Number of pulses to alarm for Counter 5
 - Number of pulses to alarm for Counter 6
 - Alarm Latch Time
 - Integration Time
 - Integrator Warning Level
 - Temperature Low
 - Temperature High
 - Voltage Low
 - Voltage High
 - Auxiliary input
 - Inverse function for any of the inputs

UNIVERSAL PROGRAMMABLE SEISMIC DETECTOR
RELEASE FORM:

General Information	
Released on:	30/02/05 7:23:45 PM
Firmware version:	0007
Production date:	10/08/2002
Production number:	10
Approval:	NONE
Company Code	ACTIVATED (order 2)
Company Name:	company 123
Programming Time:	30/02/05 7:23:00 PM
Programming Counter:	2

DETECTOR SETTINGS		
Parameter	Changed	Value
Application Setting:	YES	700 Vault and Safe Application 703 Light weight Vault and Safe
Sensitivity:	YES	Custom 85% GREF [100 %]
Remote Attenuation:	NO	NONE [100%]
Plug-in Board:	NO	RELAY BOARD
System Test:	NO	NONE
Alarm Pulses Counter 5:	YES	10 5

1 of 2

Parameter	Value
Alarm Pulses Counter 6:	-
Alarm Latch Time:	3s
Integration Time:	100%
Integrator Warning Level:	75%
Temperature Low:	-15.0 °C
Temperature High:	83.1 °C
Voltage Low:	8.5 V
Voltage High:	15.4 V
Accessory Input:	DISABLED
Inverse Function:	AUX=N D/N=N TEST=N SENS=N

Owner Information	
Ge-Security	
+31 435 456787	
Comment	Signatures,

2 of 2

You can both print or save the document on your laptop or on diskette by printing to PDF Writer. To return to the Configuration programme, select <Close> in the menu bar.

You can personalise the release form by including your company's name and/or logo. Follow the instructions in "Identification" below and "Company logo" on page 30. [bookmark37](#)

Identification

To personalise the Release Form with your name and company address, select <Setup>, <Identification> in the menu bar. Fill in the information you want to be added to the Release Form and click<Update>.

ID Settings

User Information

Name

Address Street

Number

City/Country

Tel

Comment

Company logo

To print the company logo on the Release Form, select <Setup>, <Options> in the menu bar. Select the “Open file” icon to enter your Windows Explorer and select the logo file you want to use by clicking <Open>. The file name appears in the Logo window. Update the release form with this information by clicking <Update> in this box. To remove a logo file, click the “eraser” icon.

Note: The logo should comply with the following standards:

- JPG format

(The picture will scale automatically)



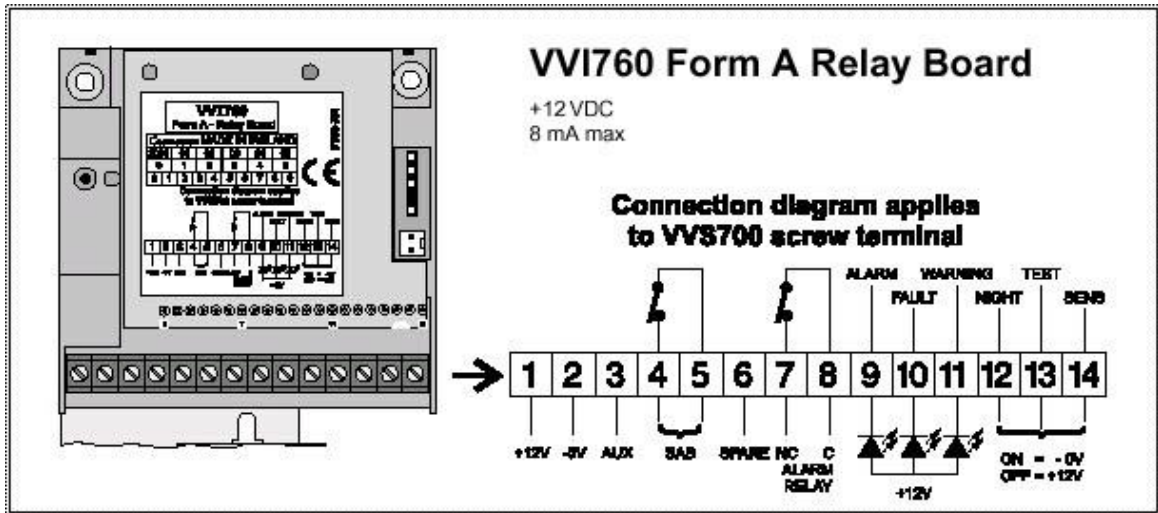
Configuration accessories

Configuration starters kit, VVK700

The configuration cable VVI740 enables the detector and the computer to communicate. A serial communication port, RS232, is required on your laptop. The cable is the only installation tool that the installer needs when configuring the detector. Supplied with the cable is the Seismic Configuration Manager 700 (SCM700), the software program.

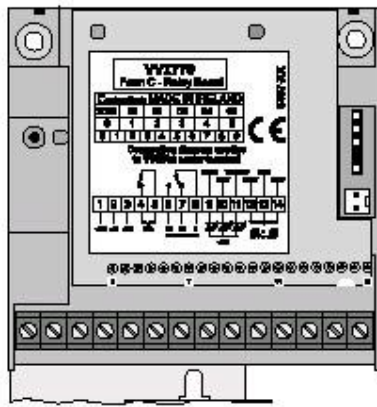
Form A relay board

The VVI760 is a Form A relay board with a plug-in connector to connect the relay board to the detector header. The connection diagram applies to VV700 screw terminal



Form C relay board

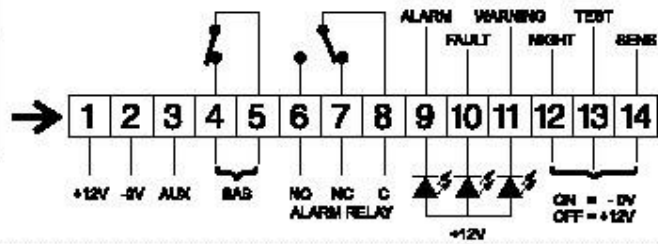
The VVI770 is a Form C relay board with a plug-in connector to connect the relay board to the detector header. The connection diagram applies to the VV700 screw terminal.



VVI770 Form C Relay Board

+12 VDC
8 mA max

Connection diagram applies
to VVS700 screw terminal



Engineering

This section is not available to the installer / customer.

A password is required to enter this section. Passwords can be requested but will only be granted to UTC employees who have attended the “Advanced SCM700 applications” course.

Access will be registered by name with a personal password.

Special applications

The 700 Series allows the hardware to be adapted to almost any application. There are five default application settings. These settings are tested and approved by various approval agencies. These default detector types are optimised for vault, vault doors, safes, ATM's, Night Safe Deposit Boxes, Weapon Stores, Filing Cabinets, etc. However, these detector types could also be useful for other applications.

If there is an application area where the default detector types are NOT sufficient, contact your local distributor. They can arrange a meeting with a specialised seismic engineer to discuss the possibilities. The 700 Series can also be reprogrammed in the most cases for your special needs.

Special requests can range from sensitivity changes, input / output signal configurations, signal polarity changes, etc. These requests will be tested and a special Customer Model File will be generated for your application. These customised detector settings can then be loaded as described in "Save to file" on page 12.

Parameter change tracking

Introduction

As described in the Introduction, the main addition in this v2.0 of the SCM700 software is a feature called 'Parameter Change Tracking'. Through this feature, any change of any of the user programmable parameters can be traced at all times.

Whenever one or more parameters have been changed, the detector will store which parameters have been changed, who has changed them (company-specific code) and when these have been changed. The release form plays a critical role in the Parameter Change Tracking, as this printed form will include all current and all previous parameter settings, as well as a programming counter (see below).

The user is free to activate this feature or not. However, once it is activated it cannot be de-activated.

You must be a registered user in order to use the Parameter Change Tracking feature or to change parameters on a VV700/VVS700 detector that has the Parameter Change Tracking feature activated. Indeed, non-registered users can only modify parameters on VV700/VVS700 seismic detectors that don't have the Parameter Change Tracking feature activated while registered users can modify parameters on any VV700/VVS700 seismic detector for as long as their registration has not expired.

This feature is 100% backward compatible meaning that it can be activated on all VV700/VVS700 detectors, also on all VV700/VVS700 detectors already in the field.

Becoming a registered user

In principle any VV700/VVS700 user/installer can become a registered user by simply requesting registration through his/her local UTC sales representative.

Once the application has been approved, the user will get a confirmation email with his/her company-specific (Ccode) file and installation (CodeInst) program.

Upon receipt of the email, the user (typically the administrator) can install his/her company code on as many computers as required within his/her own company by executing the "CodeInst.exe" file on each of these computers. This program will store the company code together with several computer specific parameters in an encrypted file somewhere on the hard-drive of the computer. In this way, it will be impossible to simply copy the Ccode file to another computer system (i.e. from a non-registered company) and change parameters 'on behalf of' the registered company. A password is required to execute the "CodeInst.exe" file. This password must stay with the administrator, which consequently restricts the distribution of the Ccode file.

For any given registered company, the company code will of course be the same for all computers on which it has been/will be installed but the administrator can create multiple users (i.e. one for every laptop/computer on which the company code is installed). When the Ccode has been installed the installer must start the SCM700 software in order to define his/her password on that specific computer/laptop. This need only be done once after installation.



While it is UTC responsibility to issue and keep track of the company codes, it is the registered company's responsibility to issue and keep track of the users it creates.

User Management

Only an administrator can add/ delete users or change passwords. The company's administrator is responsible for maintaining this list of users and passwords.

Under <Setup>, <Users> the administrator can Add/ delete new users or change passwords, see picture below.



Using the parameter change-tracking feature

Once a company code has been installed on a computer, together with the parameters downloaded, the company code will be stored on the VV700/VVS700 seismic detector whenever one or more parameters of this detector are changed through the computer. This assumes that the parameter change-tracking feature has been enabled on that VV700/VVS700 detector.

If the parameter change-tracking feature has not been activated on the VV700/VVS700 seismic detector, and during the parameter downloading the SCM700 software detects a valid Ccode on its hard drive, you will be prompted with the question whether or not you want to activate the parameter change-tracking feature.



You have the option to activate or to cancel but once the feature is activated, it cannot be de-activated anymore. This also means that when the parameter change-tracking feature has been enabled, only registered companies can modify parameters in that detector.

Once the parameters are downloaded, and the parameter change-tracking feature is enabled, the user will be prompted.



Release form

The release form plays a critical role with the parameter change-tracking feature. Indeed with the parameter change-tracking feature activated, the detector stores which parameter has been changed and, for those parameters that have been changed, it also stores the new value. However, because of memory considerations the detector *does not* store the previous value of the changed parameter. This is where the release form comes to play its critical role, as the current and the previous values of each parameter are printed on the release form.

Consequently we strongly recommend that your company put in place a procedure to recover the release forms after each commissioning of the VV700 detector.

UNIVERSAL PROGRAMMABLE SEISMIC DETECTOR

RELEASE FORM:

General Information

Released on: 3/24/2005 7:23:45 PM

Firmware version: 0007

Production date: 10/08/2002

Production number: 10

Approval: NONE

Company Code ACTIVATED (code=2)

Company Name: company 123

Programming Time: 3/24/2005 7:23:00 PM

Programming Counter: 2

DETECTOR SETTINGS

Parameter	Changed	Value
Application Setting:	YES	700 Vault and Safe Application 700 Light weight Vault and Safe
Sensitivity:	YES	Custom 85% GREF [100 %]
Remote Attenuation:	NO	NONE [100%]
Plug-in Board:	NO	RELAY BOARD
System Test:	NO	NONE
Alarm Pulses Counter 5:	YES	10 5

1 of 2

Parameter	Value
Alarm Pulses Counter 6:	-
Alarm Latch Time:	3s
Integration Time:	100%
Integrator Warning Level:	75%
Temperature Low:	-15.0 °C
Temperature High:	83.1 °C
Voltage Low:	8.5 V
Voltage High:	15.4 V
Accessory Input:	DISABLED
Inverse Function:	AUX=N D/N=N TEST=N SENS=N

Owner Information

Ge-Security

+31 435 436737

Comment Signatures,

2 of 2

Next to the current and previous values of all parameters, the detector identity as well as the information of the commissioning company is also printed.

Another critical parameter with respect to the parameter change-tracking feature is the programming counter, also printed on the release form. This counter is also stored on the detector and is incremented whenever a connection between the VV700/VVS700 detector and a PC with SCM700 software and valid Ccode-file is established and at least one parameter has been changed. In order to guarantee full tracking of all parameter changes, the physical maintenance file of the end-customer (i.e. a bank) should contain all subsequent release forms (thus also all subsequent programming counters).

Therefore at the end of an on-site visit if any of the parameters have been changed / reprogrammed, the installer must print this release form, sign it and hand it over to the end-customer (i.e. bank) for their physical maintenance file. Only in this way can all parameter changes always be tracked.