System requirements

Operating System:	Windows XP or Vista
Display:	Minimum 800 x 600 with 256 colours. Recommended: 1024 x 768 with High Colour - 16-bit
Minimum Software:	Microsoft Internet Explorer 6.0 Windows Installer 3.1* (Windows 2000 & XP) Microsoft .NET Framework 2*

* If Microsoft .NET Framework 2 or Installer 3.1 is not detected during the installation set up process, they will be automatically installed prior to the **SMART**SENSE application install. This will extend the installation time significantly.

The **SMART**SENSE **CD ROM**

A Windows installer package (**.msi**) of the **SMART**SENSE software is supplied on the CD ROM.

The Drivers folder on the CD contains the USB device drivers for both the SmartSense loggers and the AMC232USBDH USB Serial Adapter cable. The drivers will install to the local machine at the end of the **SMART**SENSE software install.

A PDF format of the **SMART**SENSE Software Manual, the SmartSense Q Primary Activities and the 5 Minute Activities are available in the Resources folder on the **SMART**SENSE CD ROM. A copy of these documents will install to Start ► Programs ► SmartSchool Systems ► SmartSense Resources. It is advised that the latest version of Adobe Acrobat reader software is installed to read these documents.

Step 1: Install the **SMART**SENSE **software**

USB users: Make sure the SmartSense logger is **not** connected to the USB port prior to, or while, the **SMART**SENSE software is being installed.

- Log on as ADMINISTRATOR (or with equivalent access rights) on the system
- Close any open programs – you may need to restart your machine for configuration changes to be made.
- Insert the **SMART**SENSE CD ROM into the CD Drive. This is an auto play CD ROM, meaning that Windows should detect the presence of the CD and automatically start up the **SMART**SENSE auto run program. If the Autorun program fails to start, use Windows Explorer

to navigate the CD ROM contents and double click on the file **setup.exe**.

Note: If .NET Framework 2 is not detected, it will now install.

- Follow the on-screen instructions to complete the installation of **SMART**SENSE and its associated files onto the hard disc.
- When the installation is complete, eject the CD ROM and store it safely.
- Restart your system.

Step 2: Connect an interface or data logger to the computer

- **Serial connection:**
  Connect the interface/ data logger to the serial port on the computer. Note which serial port you have connected to e.g. COM 1, as this information will be required when you start the **SMART**SENSE software.

- **USB connection:**
  The first time an **SMART**SENSE unit e.g. Q3, Q5, Link, or Q Advanced is connected to a USB port on the computer, the USB drivers will need to be installed.

  1. Connect the **SMART**SENSE unit to the USB port on the computer.

  2. Windows will automatically detect a new device and install the drivers.

Step 3: Start the SMARTSENSE program for the first time

Start the **SMART**SENSE software e.g. Start ► Programs ► SmartSchool Systems ► and double click on **SMART**SENSE Software.

Step 4: Select a User level

The first time the **SMART**SENSE program is opened a 'Select Program Level window will automatically open. Select a suitable user level.

- Level 1 is aimed at 'start' level (e.g. up to 9 years old).
- Level 2 is aimed at 'mid' level (e.g. 9 – 15 years old)

Open Worksheet
To select and open a worksheet and its accompanying experimental set up file.

Open Setup
To select and open an experimental set up file. This will pre-set the software for a specific operation.

Note: Open Setup is not available when the user level is set to Level 1.

Set up Remote
Used to set up the available options for capturing data while disconnected from the computer (remote). These options can include the duration of a recording, the time between each sample and triggers. (The options available will depend on the level you have selected to work at).

Note: Set up Remote is not available when the user level is set to Level 1.

Retrieve Remote
Use this option to retrieve a data set stored in your data logger's memory.

have selected to work at). When your selection has been made, click on Finish.

Click on the **Start**/Stop icon [icon] Recording will start when the start condition you have selected is met e.g. if None is the selected trigger then the recording will start as soon as the **Start**/Stop icon is clicked. The recording will stop when the selected time span has passed.

Note: If you want to stop a recording before it has run the full term, click on the Start/**Stop** icon. [icon]

Scope
Scope is a simple oscilloscope type display. A scope trace is redrawn continuously on the screen as long as data is being measured. It is ideal for demonstrating fast events where there are rapid changes e.g. ECG traces, sound waveform.

Make your selection from the control panel and click on the **Start**/Stop icon [icon] to begin recording.

Note: Scope is not available when the user level is set to Level 1.

Timing
Timing is used to allow students to study Time, Velocity, Acceleration, Momentum and Kinetic Energy relationships using switch-type (digital) sensors such as Light Gates. Sensors are connected to inputs 5:A or 5:A & 6:B.

A recording wizard will open with the options available to select before recording data. (The availability of the options will depend on the level you have selected to work at). When the selection has been made, click on Finish.

Click on the **Start**/Stop [icon] icon and a reading will be displayed when a change in signal is detected from the digital sensors.

Open File
Used to load a previously saved .SSL or .sid file. Locate the correct file and click on open.

- Level 3 is aimed at 'exam' level (e.g.15 years plus).

Note: The program level can easily be altered at anytime using the Level icon once a logging option has been opened. Click on the Level icon and cycle through the levels. The currently selected level will be saved when the **SMART**SENSE program is closed.

Step 5: Select an Interface and Connection

The first time **SMART**SENSE is opened a 'Select Interface' window will automatically open to allow the correct interface and connection to be selected.

(a) Select the correct interface from the drop-down menu.

- **SmartSense Range** for an **SMART**SENSE data logger or interface
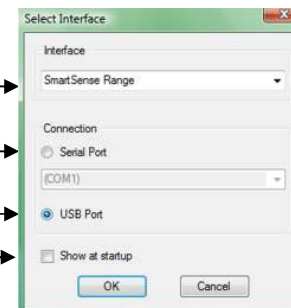- **Flash Logger** for the **SMART**SENSE Flash Logger
- **Sense and Control** for the Sense & Control or Sense & Control EasyLog.
- **Example Data** for stored example data to show how sensor readings are displayed. If this option is selected you will not be able to collect data from your interface or data logger.

(b) Select the appropriate connection i.e. either Serial or USB Port.

- If you are connecting via a **USB** lead, select USB Port.
- If you are using a **serial** lead, select Serial Port and then the number of the communications port used from the drop-down menu e.g. Communications Port (COM2).
- If you are using a **USB/serial adapter**, select Serial Port and then the adapter from the serial ports drop-down list e.g. AMC232USBDH USB Serial Port (COM4).
- If you are using **Bluetooth**, select Serial Port and then the serial port configured for Bluetooth from the drop down list e.g. Bluetooth Communications Port (COM4).

(c) If these settings will stay the same leave the 'Show at startup' box unticked. If the box is ticked the 'Select Interface' window will

automatically open when you next start **SMART**SENSE, so you can check that the currently selected Interface and method of connection are correct. This is useful if you use different types of interface (e.g. both Sense & Control and **SMART**SENSE Advanced units) or if the interfaces use different methods of connection (e.g. use both **SMART**SENSE Advanced units which connect via a serial port and **SMART**SENSE LINK units which connect via a USB port).

(d)   Click on OK. The program will save the current selection.

Note: To change this selection at any time, CANCEL any 'failure to connect' errors, select **Interface** from the **File** menu and alter the interface selection.
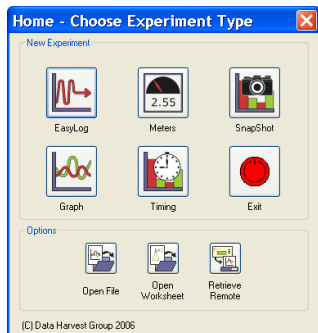
Once a connection is established the Home page will open, click on the appropriate icon.

The Home page

Home is the main navigation page, which contains the icons for all available options.

The appearance of the Home page and the complexity of the toolbars and functions in the experiment options are altered by the User level selected. The more bars, the higher the user level.

The Home page at Level 2 and 3

Note: If the interface/ data logger detected cannot use an option it will appear greyed out e.g. the Setup and Retrieve Remote options will only be available for data loggers which support remote data collection.

EasyLog
The Graph window will open pre-set to record sensor values **continuously** as a line graph until stopped.

Click on the **Start**/Stop icon to start recording. Logging will start with a time span of 30 seconds and when it has elapsed the time span will double automatically. This will continue until the recording is stopped by clicking on the Start/**Stop** icon.

Meters
The Meters window gives an introduction to sensors and how they respond to change. Up to four section displays can be open at any one time and they can be any combination of sensors and displays.

The program will open with live data being displayed from a sensor in a Numeric window. Click on the appropriate picture icon on the Menu bar to open other section displays i.e. Numeric, Gauge, Colour Change or Bar. To alter the sensor displayed in a section, **right** click in the individual section window and select the sensor from the list.

Click on the Start/**Stop** icon to stop recording.

Snapshot
The Graph window will open pre-set to record sensor values on demand (**manual sampling**) with a bar graph display.

Click on the **Start**/Stop icon to start recording. Click in the graph area to record the current value for each active sensor. Click on the Start/**Stop** icon to stop data being recorded.

Graph
Graph is used to record sensor values against a **chosen time span** as a line graph display. The window opens with a real time logging wizard from which the time span, interval between samples, start condition and triggers for the recording can be chosen. (The options available will depend on the level you

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