Gas Measurement Instruments Ltd

WIN 4500
User Guide

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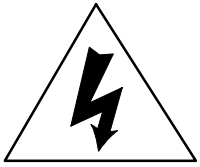
SAFETY



WARNING: MAINS OPERATED EQUIPMENT. ALWAYS ISOLATE THE MAINS SUPPLY BEFORE WORKING ON THE 4500 SYSTEM. CARE MUST BE TAKEN AS RELAY CONNECTIONS MAY STILL BE LIVE.

SAFETY PROCEDURES

If the system detects gas, follow your own organisation's procedures and operational guidelines.

- Gases are dangerous. Care should always be taken when monitoring gases.
- The user should have a set of procedures/actions appropriate to varying gas/alarm levels before the 4500 system is used.
- The user should produce a notice (displayed next to the 4500 system) listing actions to be taken if an alarm/fault occurs.
- The 4500 rack is not suitable for use in a flammable atmosphere.
- The 4500 rack system must be regularly serviced and calibrated.
- Only Gas Measurement Instruments (GMI) replacement parts should be used.

- The 4500 rack system components have been tested in accordance with the European Electro-Magnetic Compatibility requirements both for emissions and interference and complies with the regulations and appropriate European Directives. To make sure of satisfactory operation, the system must be installed in accordance with GMI's instructions and in line with good instrumentation practice, particularly with regard to cable screening and earthing.
- Users should satisfy themselves that the 4500 system is suitable for their application
- Any right of claim relating to product liability consequential damage to any third party against GMI is removed if the above warnings are not observed.

INSTALLATION AND OPERATION

To make sure that the system is safe both for the user and property it must be installed, commissioned and maintained by or under the supervision of qualified persons. Regard should be taken of local wiring regulations, codes of practice, statutory requirements and any specific instructions issued by GMI. Any operating or installation queries relating to this product should be directed to Gas Measurement Instruments Limited, Customer Support, Renfrew.

CERTIFIED PRODUCT

Conditions Of Use

The system contains products certified for use in hazardous areas. The user should establish that the certification of the product is suitable for use in such areas and that any special conditions of use associated with the product are observed.

For details of special conditions of use, please consult the relevant certificate, manual or systems specification.

REVISION RECORD

Date	Issue	Pages	Description Of Change
22/09/97	1	All	New User Guide.
19/08/98	2	All	Front and rear covers replaced. All references to the Relays menu were removed. Details of the Safe Status and Test Relays options were removed from the Card menu and details of the Test option were removed from the Utilities menu. A Note was added to inform the user that an Access Code is required when the software is used for the first time.

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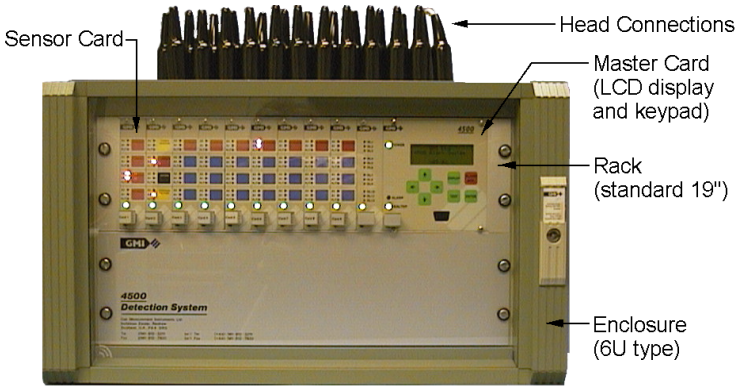
INTRODUCTION

WIN4500 is GMI's Windows™ based software package used to view, setup and calibrate the 4500 multi-channel gas monitoring and alarm system. The 4500 system (shown below) is a mains powered, fixed system, designed to provide continuous monitoring and control of:

- Flammable gases
- Toxic gases
- Oxygen deficiency/enrichment.



Up to 40 sensors (detection heads) can be monitored using a standard 19", 3U rack. Each sensor has two user adjustable alarm levels (A1 and A2). Light emitting diodes (LEDs) indicate when the measured gas concentration exceeds the preset A1/A2 alarm levels or a fault occurs on the system. Relays are provided to drive external devices if an alarm or fault occurs.

Setup and calibration is achieved using an IBM™ compatible PC and GMIs Windows™ based WIN4500 software (or the Active-8-or hand held unit can be used). See the *"4500 OPERATION AND MAINTENANCE MANUAL"* (Part Number 57138) for further information.

SERVICE

GMI offers inclusive service contracts with guaranteed response times to contract customers, contact our Service Department for further information.

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WORLD WIDE WEB

Visit our web site at: http://www.gmiuk.com.

INSTALLING *WIN4500*

SYSTEM REQUIREMENTS

To run *WIN4500*, you require the following:

- IBM™ compatible PC running Windows 95™
- *WIN4500* software disk(s) and a 3.5" floppy disk drive
- 9 way D-type connector cable (supplied).

REGISTRATION

GMI would like to keep you informed of the latest changes and improvements made to the *WIN4500* program and to provide technical support if required. To do that, we need to know who you are. Please fill out the Registration Card at the rear of this Guide and mail it to us. You must send in your Registration Card to receive technical support.

ON-LINE HELP

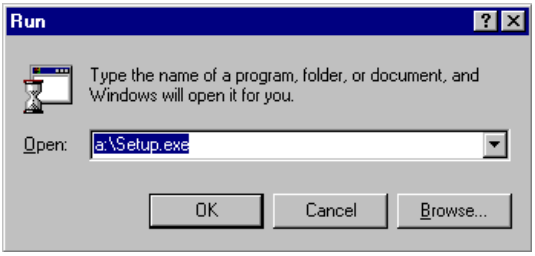
WIN4500 includes an on-line help file that details procedures, features and commands, and information about dialogue boxes and menus. To request on-line help, choose a help category from the Help menu, then choose an item from the main Help index.

INSTALLATION

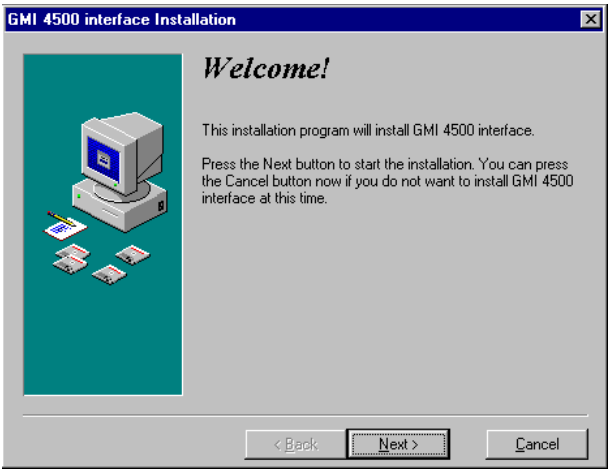
To install *WIN4500* proceed as follow:

1) Switch on the PC and start Windows™ 95.
2) Insert the first *WIN4500* installation disk into the appropriate floppy drive.
3) From Windows 95™, click the Start button and select Run.
4) In the Run dialogue box, type *a:\setup.exe* (or replace the letter

"*a*" with the drive you are installing the software from):

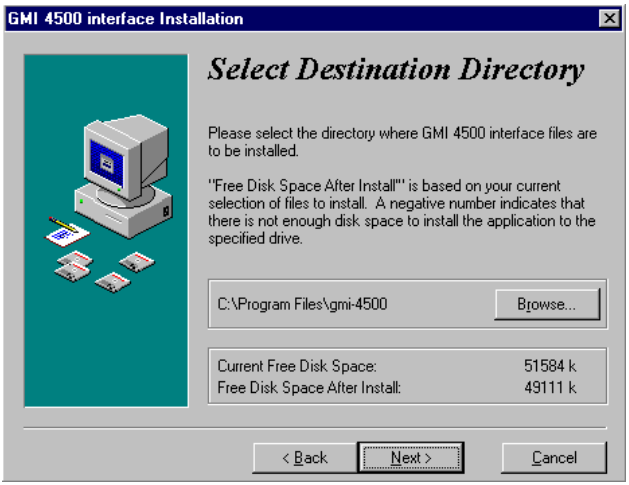


5) Click OK when ready. The "Welcome" window appears:



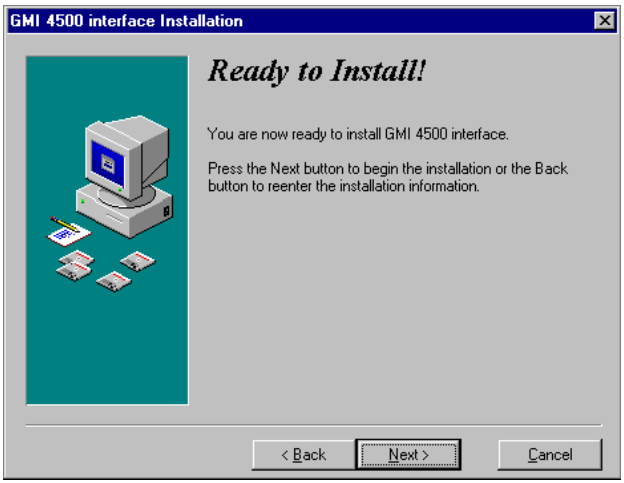
6) Click the Next button to continue with the installation (or click the Cancel button to exit installation).

The “Select Destination Directory” window appears:



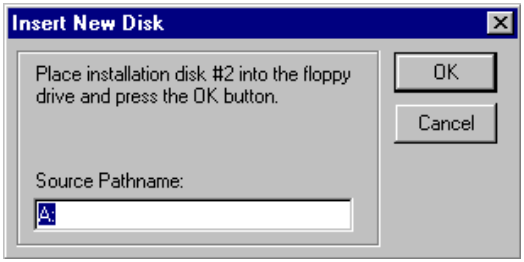
Check there is enough Free Disk Space to install *WIN4500*.

7) Click the Next button to install *WIN4500* in the selected directory (or click on the Browse button to select a different location). The “Ready to Install” window appears:

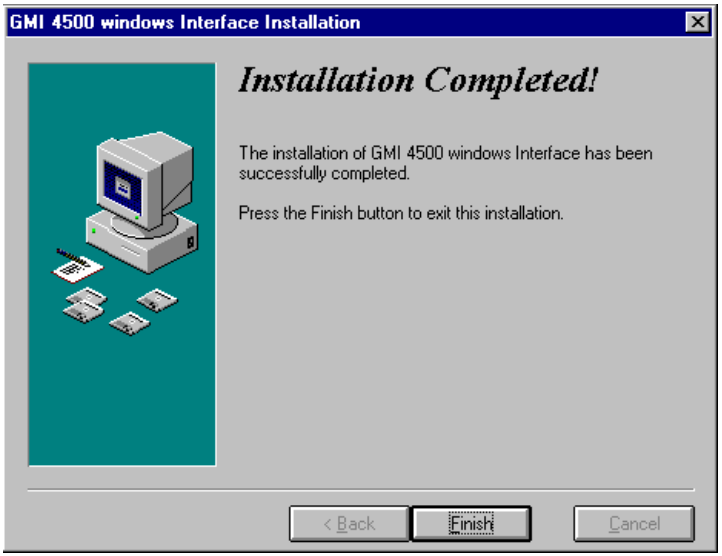


8) Click the Next button to begin installation.

9) The Insert New Disk window appears. Insert the second disk and click on the OK button.



10) When installation is complete, remove the diskette from the floppy drive and restart your PC if requested to do so.



11) Click on the Finish button when installation is complete, remove the disk from the floppy drive and restart your PC if requested to do so.

CONNECTING THE 4500 SYSTEM TO A PC

To connect the 4500 system to a PC, proceed as follows:

1) Plug the female end of the 9 way D-type cable (supplied) to the serial port (COM1) port on the rear of the PC.
2) Open the rear door of the 4500 system enclosure (if required).

CAUTION: Take suitable antistatic precautions.

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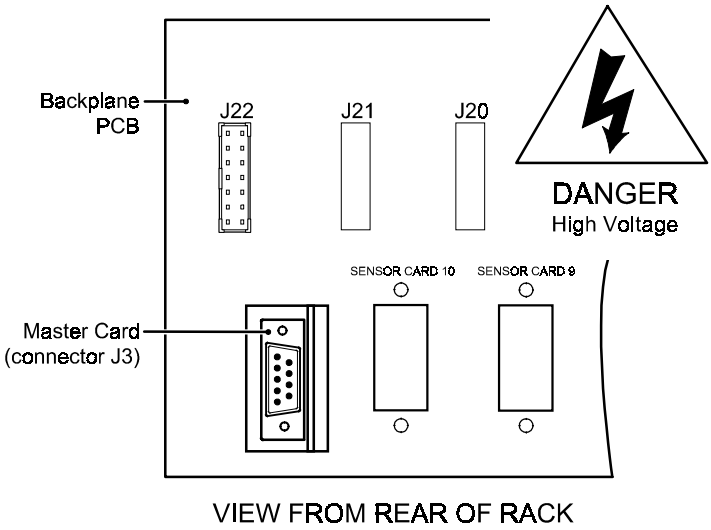
3) Connect the male end of the 9 way D-type cable through the rear of the backplane PCB and into connector J3 on the master card (as shown below):



STARTING *WIN4500*

To start *WIN4500* proceed as follows:

1) Select *Start, Programs, Gmi-4500, WIN4500* from the Windows 95™ control bar

or

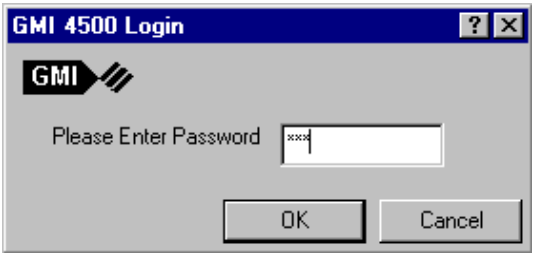
Double click the

icon on your PC's desktop.

Note: The GMI Software Access Protection window appears when *WIN4500* is run for the first time. An access code is required before the *WIN4500* software can be used. Phone our Customer Support Department on 0141 302 8319 (UK customers) or (+44) 141 302 8319 (International) for your Access Code.

The "GMI 4500 Login" window appears:

2) Enter the start up password.



Note: The default password after installation is “GMI”. The start up password can be changed at any time, see “*SETTING THE START UP PASSWORD*” in “*BASIC OPERATION*”.

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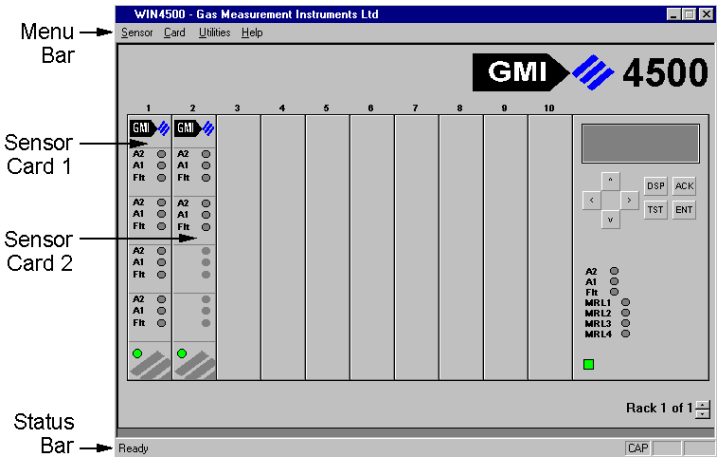
3) Click the OK button when the correct password has been entered. The *WIN4500* main window appears. See the next section, “*BASIC OPERATION*”.

BASIC OPERATION

After typing the start up password the *WIN4500* main window appears. The *WIN4500* main window (shown below) displays a rack similar to the one installed in your 4500 system. The rack shows the cards and modules installed and the front panel. The *WIN4500* main window will look similar to the example shown below:



In the example above, the 4500 system has:

- Two sensor cards installed in the rack (sensor cards 1 and 2)
- Sensor card 1 has four modules and sensor card 2 has two modules
- Eight empty slots in the rack (slots 3 to 10)
- No alarms or faults active.

Using the menus on the *WIN4500* Menu Bar you can:

- View a sensors details

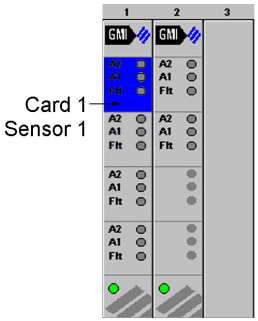
- Configure a sensor or group of sensors
- Calibrate a sensor or group of sensors
- Set a start up password
- Configure the communications port
- Save and reload the system configuration
- Access on-line Help.

The *WIN4500* Status Bar is displayed at the bottom left edge of the *WIN4500* main window. It provides a short description of the options available on the Menu Bar when they are selected with the mouse pointer.

If an alarm is active on the 4500 system, the appropriate alarm LED (A1 or A2) on the sensor card module appears red and the corresponding LED on the front panel (A1 or A2) also appears red. If there are no alarms the LEDs are grey. If a fault is active on the 4500 system, the fault (FLT) LED on the sensor card module appears yellow and the fault (FLT) LED on the front panel appears yellow. When no faults exist, the fault LEDs are grey.

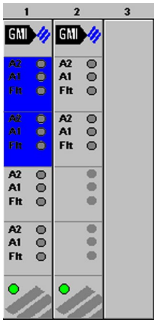
SELECTING A SENSOR

Click on the sensor you wish to view with the left mouse button. In the example shown below, Sensor 1 on Card 1 is selected:



The sensor appears blue when selected. Click again on the sensor to deselect it. You can select more than one sensor at a time.

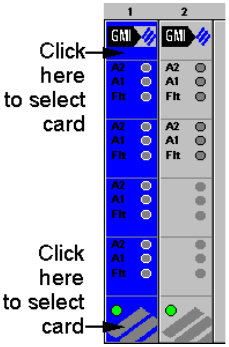
In the example below, sensors 1 and 2 on sensor card 1 are selected:



Certain commands can operate on a group of sensors. Other commands operate on only one sensor where the last sensor to be selected is the only one affected.

SELECTING A CARD

Point to the top (or bottom) of the card (shown below) and click the left mouse button. In the example shown below, sensor card 1 is selected:



The sensor card appears blue - it is now selected. To deselect the sensor card, click at the top or bottom again. You can select more than one sensor card at a time.

VIEWING SENSOR DETAILS

To view sensor details carry out one of the following:

- Select the sensor, then from the Sensor menu select Details

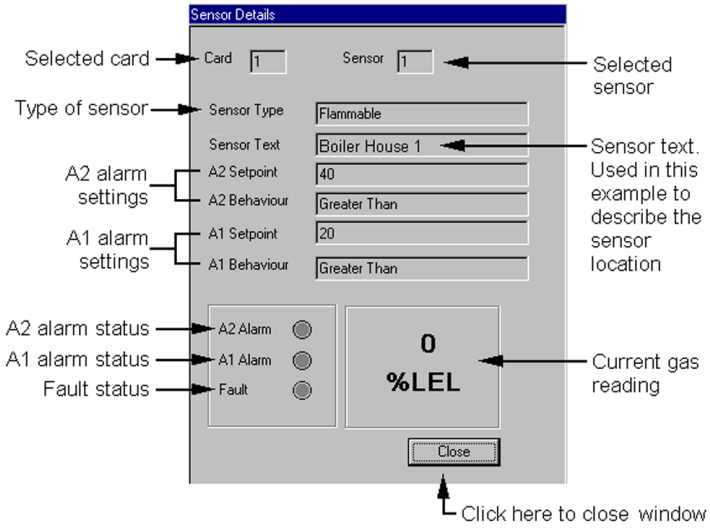
or

- Double click on the sensor

or

- Click with the right mouse button on the sensor and then select Details.

The Sensor Details window appears:



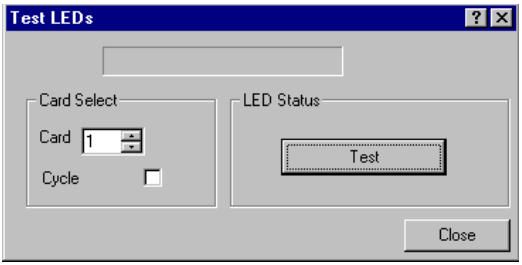
TESTING SENSOR CARD LEDs

The Test LEDs option on the Card menu allows you to test the A1, A2 and Fault LEDs on each of the sensor cards. LEDs can be tested on a single card or the cycle option can be selected to test each sensor card in turn.

Selected Sensor Card

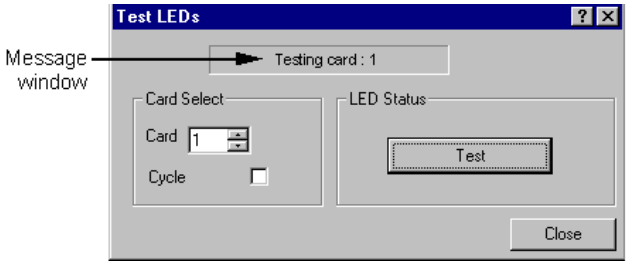
To test the LEDs on a selected sensor card, proceed as follows:

1) Select the Test LEDs option from the Card menu. The Test LEDs window appears:

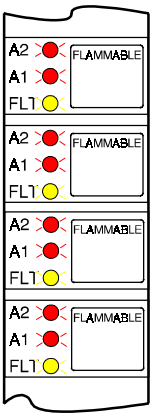


2) Select a card to test from the Card Select dialogue box (Card 1 is selected in the example below).

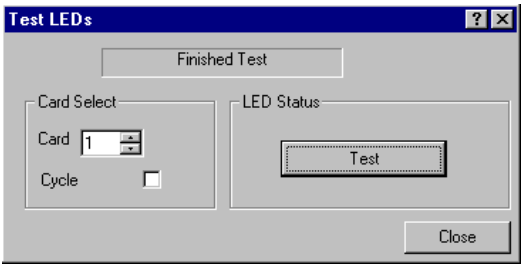
3) Click on the Test button to test the LEDs on the selected sensor card. The message window displays how the test is progressing.



The LEDs on the selected sensor card switch on for two seconds and then off for two seconds.



When the test is complete “Finished Test” appears in the message window, as shown below:



NOTE: If any of the LEDs do not illuminate, call for Service.

---

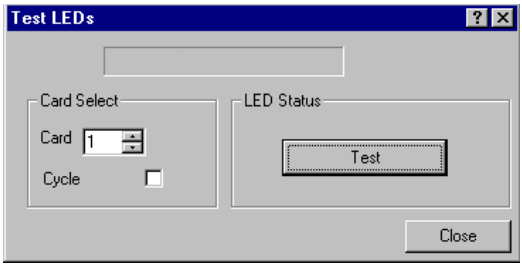
4) Click the Close button to close the Test LEDs window.

Cycle Test

The cycle test option allows you to test all the sensor cards in the 4500 system in sequence, one after the other.

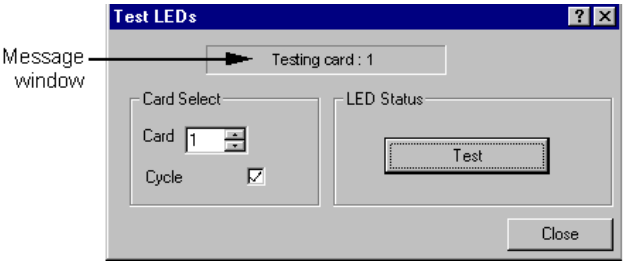
To test the sensor cards proceed as follows:

1) Select the Test LEDs option from the Card menu. The Test LEDs window appears:



2) Select the Cycle option. A tick mark appears in the Cycle box when selected.

3) Click on the Test button to test the LEDs.



The LEDs on each sensor card switch on for two seconds and then off for two seconds in turn. The message window displays how the test is progressing. When the test is complete “Finished Test” appears.

NOTE: If any of the LED are not working, call for Service.

---

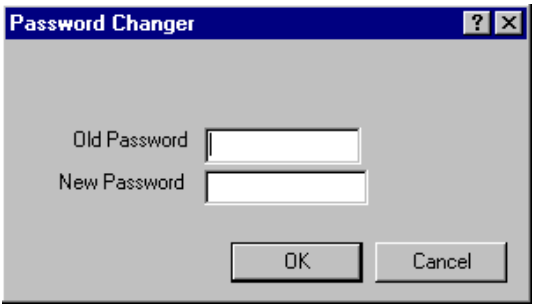
4) Click the Close button to close the Test LEDs window.

SETTING THE START UP PASSWORD

The Set Password menu item allows you to change the password that is requested when the *WIN4500* program is started. The default password is "GMI". By changing the password you can make sure that only authorised personnel can use *WIN4500*.

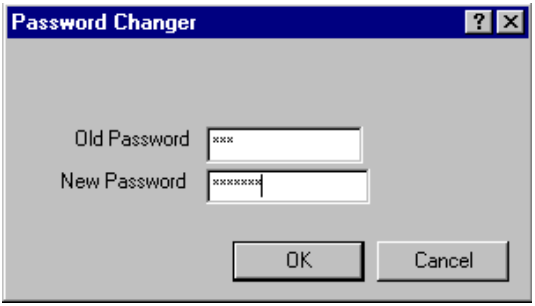
To change the start up password, proceed as follows:

1) Select "Set Password" from the Utilities menu. The Password Changer window appears:



2) Type the current password in the Old Password box.

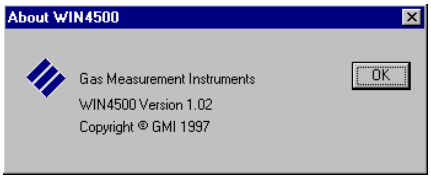
3) Type a new password in the New Password box (maximum 10 characters). Use letters of the alphabet and numbers only.



4) Click the OK button to accept the new password or Cancel to retain the existing password.

CHECKING THE SOFTWARE VERSION

Choose About *WIN4500* from the Help menu. The About *WIN4500* window appears:



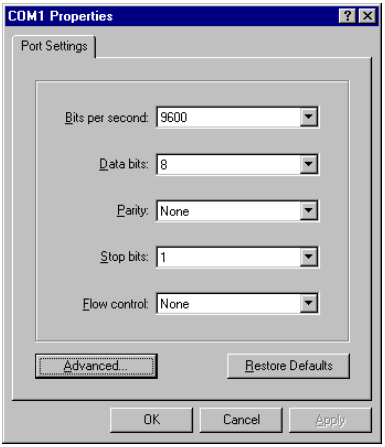
In the above example the software installed is version 1.0.

CONFIGURING THE COMMUNICATIONS (COMS) PORT

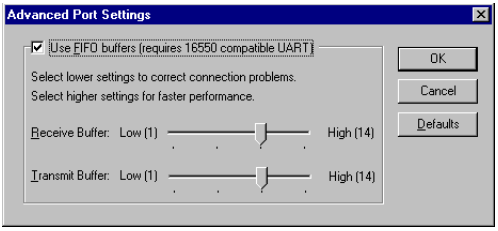
This option changes the operation of the serial port.

Note: At present all 4500 systems operate with the same configuration, so there should be no need to alter any of the default settings.

Select the Configure Port option from the Utilities menu. The COM1 Properties window appears showing the default settings:



Click the Advanced button to check the advanced default settings:



SETTING SENSOR DEFAULTS

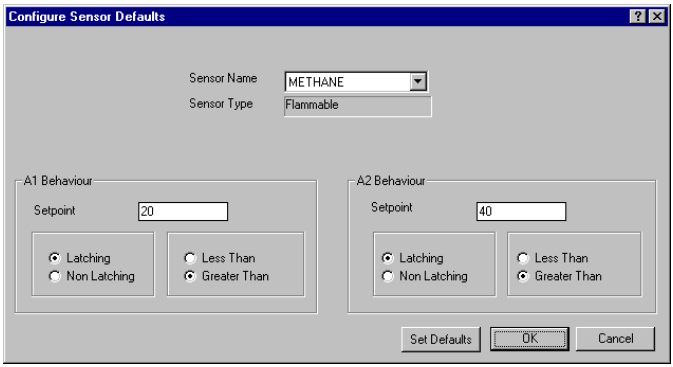
Default settings allow a sensor or group of sensors to be quickly and easily configured. The Set Sensor Defaults option allows you to create a set of values that can be assigned to a sensor for a particular gas (for example, METHANE or CARBON MONOXIDE). The default values are used to configure a sensor or group of sensors so they all have the same settings (for example: all METHANE sensors are configured to have an A1 value of 20 and an A2 value of 40).

The following default values can be assigned:

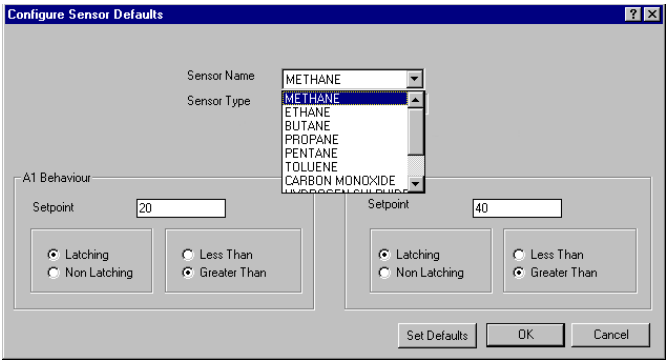
- Sensor Name (for example: Methane, Carbon Monoxide, etc.)
- A1 Setpoint and operation (Latching/Non Latching and less than (<) or greater than (>))
- A2 Setpoint and operation (Latching/Non Latching and less than (<) or greater than (>)).

To set default values, proceed as follows:

1) Select Set Sensor Defaults from the Utilities menu. The Configure Sensor Defaults window appears:



2) Select Sensor Name from the drop down list of gases. The Sensor Type automatically changes to Flammable, Toxic or Oxygen when the Sensor Name is selected. In the example below, METHANE is the Sensor Name and the Sensor Type is Flammable:



3) Set the A1 Behaviour

- Enter a setpoint value (20 in the example above)
- Select Latching or Non Latching
- Select Less Than or Greater Than.

Set the A2 Behaviour

- Enter a setpoint value (40 in the previous example)
- Select Latching or Non Latching
- Select Less Than or Greater Than.

4) Enter text into the Sensor Text box (if required).

5) Click the Set Defaults button to set the default values.

6) Click the OK button to set the default values and return to the *WIN4500* main window.

CONFIGURING A SENSOR OR GROUP OF SENSORS

NOTE: See the previous section, *"SETTING SENSOR DEFAULTS"* before proceeding.

Configuring a sensor (or group of sensors) allows you to:

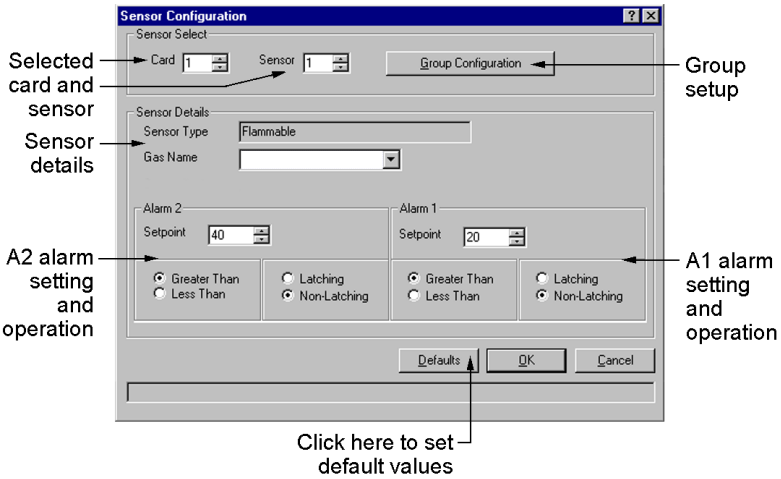
- Provide a Gas Name for a sensor from a list of possible gases
- Configure a sensor or group of sensors using the default values set in the previous section "*SETTING SENSOR DEFAULTS*"
- Enter sensor text to identify a sensor or group of sensors
- Set A1 and A2 alarm levels and alarm operation
- Select the relay safe setting (Latching/Non-Latching).

Note: A group of sensors can only be configured together if they are all the same type.

To configure a sensor or group of sensors, proceed as follows:

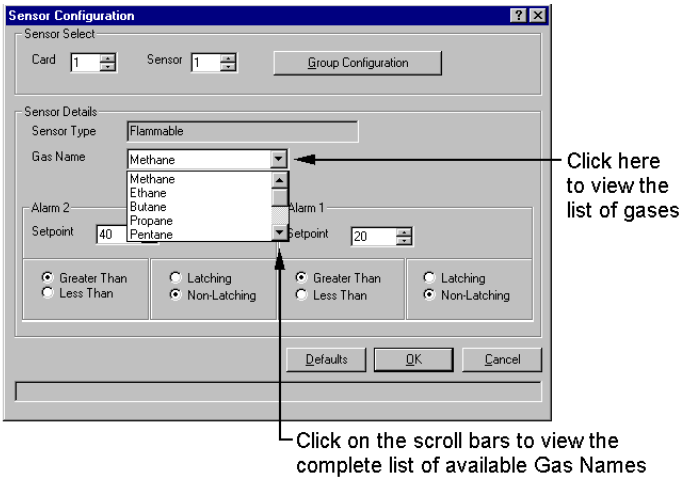
1) Select the sensor(s) to be configured with the left mouse button.

2) Select Configure from the Sensor menu. The Sensor Configuration dialogue box appears:

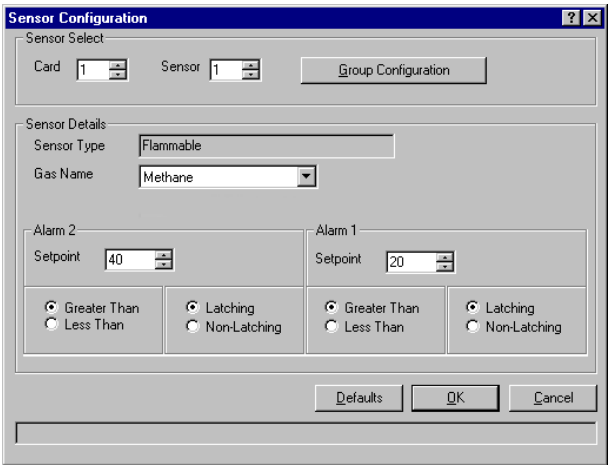


3) Select the name of the gas to be monitored from the Gas Name drop down list. Proceed to step 4 if the sensor(s) are to be configured using the Default values, otherwise proceed to step 5.

4) Click the Defaults button to set the default settings for the selected gas (if required) and proceed to step 5.



5) Click on the Sensor Text box and enter the sensor text.



6) Select the Alarm 1 and Alarm 2 options:

- Setpoint. Click on the up arrow button to increase or down arrow

button to decrease the alarm setpoint.

- Greater Than or Less Than
- Latching or Non-Latching.

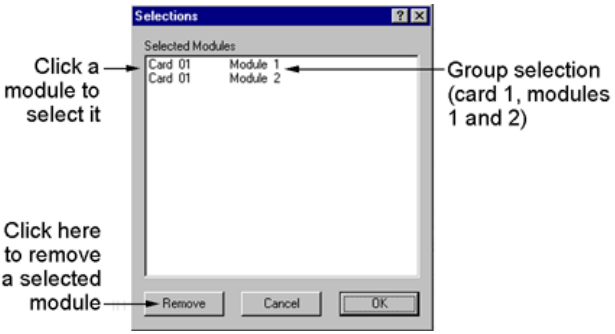
7) If you are configuring a single sensor proceed to steps 8 and 9. If you are configuring a group of sensors, proceed to step 10.

8) Click on the OK button. A message appears to inform you that the configuration has been successful:

9) Click on the OK button to remove the Module Configuration window.

Group Configuration

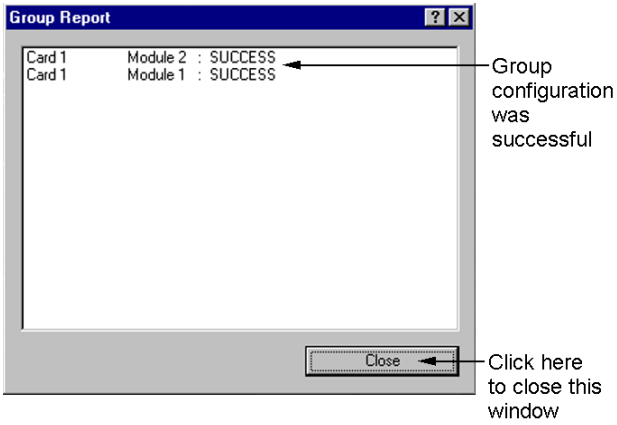
10) Select the Group Configuration button, the Selections window appears:



11) Remove a sensor from the selected group by clicking on it (to highlight it) and then clicking the Remove button.

12) Press OK to configure the selected group of sensors (or press Cancel to close the window without configuring the selected

sensors). The Group Report window appears. In the example below, the window shows that the two selected modules were configured successfully:



13) Click the Close button to close the Group Report window.

CALIBRATING THE 4500 SYSTEM

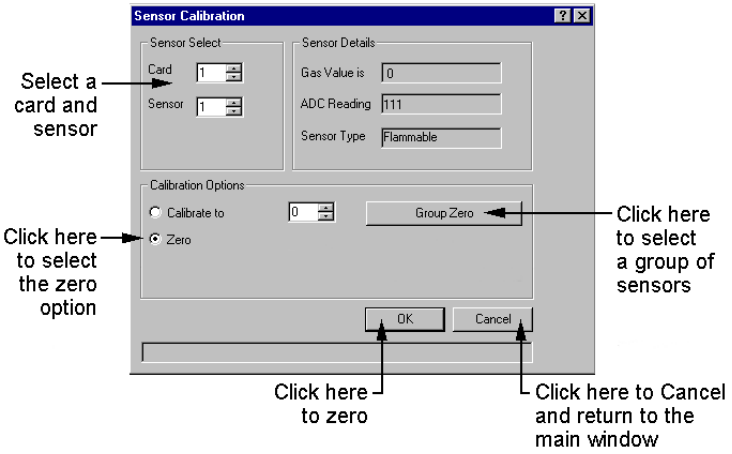
ZEROING

This function allows you to zero a sensor or group of sensors. When a sensor is zeroed the gas value reads zero when there is no gas applied to the detection head.

To zero a sensor, proceed as follows:

1) Select a sensor or group of sensors to zero by clicking on the sensor(s) with the left mouse button.

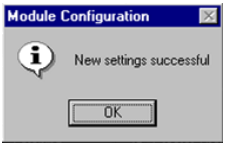
2) Select Calibrate from the Sensor menu. The Sensor Calibration window appears:



3) Select the Zero option (shown above). If you are zeroing a single sensor proceed to step 4. If you are zeroing a group of sensors, proceed to step 7.

4) Check that the correct sensor card and sensor are selected (shown previously).

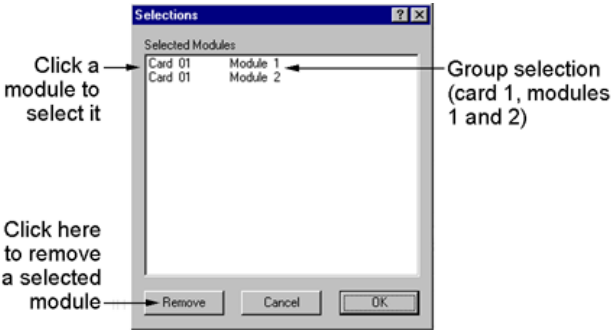
5) Click on the OK button. A message appears to inform you that the sensor has been zeroed successfully:



6) Click the OK button.

Group Zero

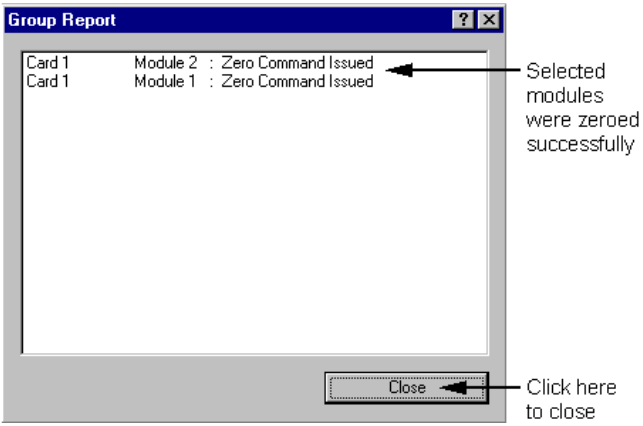
7) Select the Group Zero button, the Selections window appears:



8) A sensor can be removed from the selected group (if necessary) by clicking on it (to highlight it) and then clicking the Remove button.

9) Press OK to zero the selected group of sensors (or press Cancel to close the Selections window without zeroing).

The Group Report window appears:



10) Click the Close button to close the Group Report window.

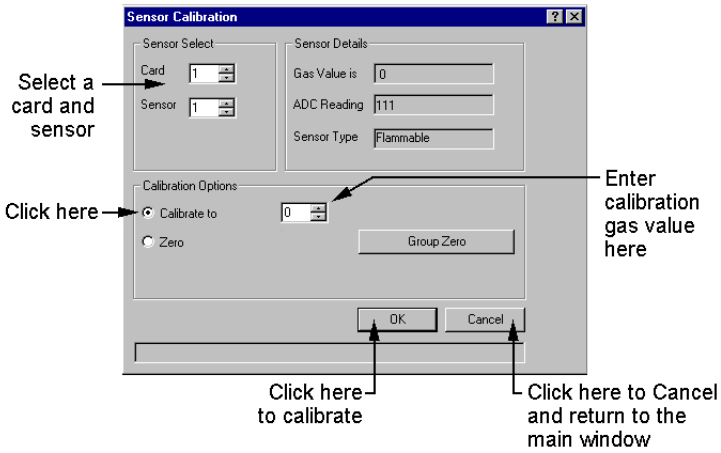
CALIBRATING A SENSOR

This function allows you to attach a calibration gas to a selected sensor and calibrate it. Each sensor in the 4500 system must be calibrated to make sure they provide an accurate reading.

Note: Sensors should be zeroed before attempting to calibrate them. See the pervious section “ZEROING” for further details.

To calibrate a sensor proceed as follows:

1) Select Sensor, Calibrate from the Sensor menu. The Sensor Calibration window appears:



3) Select the sensor to be calibrated from the Sensor Select box (if the sensor to be calibrated is not already displayed).

4) Apply the calibration gas and allow the gas reading to stabilise.

5) Click “Calibrate to”, in the Calibration Options box and enter the value of the calibration gas.

6) Click on the OK button. A message appears to inform you that the sensor has been calibrated successfully:

7) Remove the calibration gas.

CONFIGURATION FILE

The 4500 system configuration settings can be saved to a Windows™ Notepad file. The configuration file can then be reloaded at a later date, should the system require reconfiguration.

CREATING A CONFIGURATION FILE

After the 4500 system has been configured, a configuration file should be created. The save configuration option in the Utilities menu will read the configuration of all sensors in the 4500 system and save the data to a named file.

To create a configuration file proceed as follows:

1) Configure the 4500 system by following the procedures detailed earlier in this User Guide.
2) Select Save Configuration from the Utilities menu.
3) Change to the directory where you would like to save the configuration file.

4) Enter a file name for the configuration file in the File Name box. In the example above the file is called “renfrew”.
5) Click on the Save button.

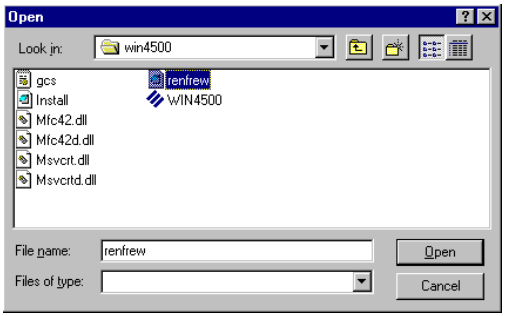
LOADING A CONFIGURATION FILE

Load configuration allows you to set up the 4500 system using the information stored in a configuration file. In the event of any change in the system, it can be re-initialized to its correct configuration.

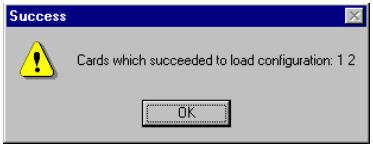
To load configuration file, proceed as follows:

1) Select Load Configuration from the Utilities menu. The Open window appears.

2) Select the file you wish to load. In the example below the “renfrew” file is selected:



3) Click the Open button to load the configuration file. A message appears confirming that the sensor cards have been configured. In the example below, the 4500 system has two sensor cards:



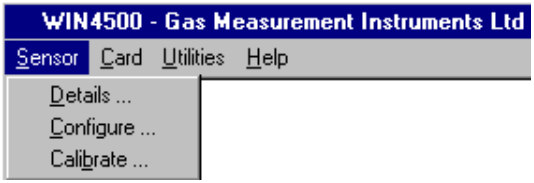
4) Check the details of the sensors in the 4500 system to make sure that they are configured correctly. See “*VIEWING SENSOR DETAILS*” in the “*BASIC OPERATION*” section.

A

WIN4500 MENUS

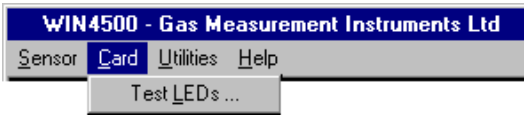
Following is a list of all *WIN4500* menus as they appear while you use *WIN4500* to view, setup and calibrate the 4500 system. The menus include keyboard shortcuts. A brief Description is provided for each Menu Item to help explain the available options.

SENSOR MENU



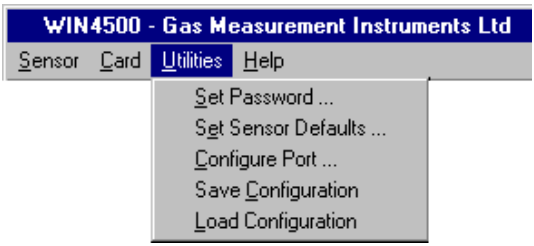
Menu Item	Description
Details	Displays information on the selected sensor. Information includes sensor type, current gas reading, A1/A2 alarm setpoints and behaviour.
Configure	Allows a selected sensor or group of selected sensor(s) to be configured. Sensor Details can be entered (Sensor Type, Gas Name and Sensor Text). Alarm 1 and Alarm 2 set point value and alarm operation can be selected (greater or less than, latching or non-latching).
Calibrate	Allows a selected sensor or group of selected sensor(s) to be calibrated or zeroed.

CARD MENU



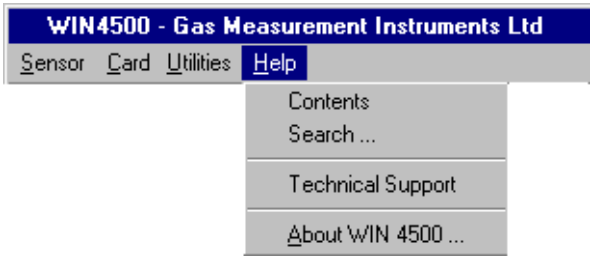
Menu Item	Description
Test LEDs	Allows the A1, A2 and Fault relays to be tested on a selected sensor card. When the cycle option is selected (ticked) the 4500 system will test the LEDs on each card installed in the rack, in turn.

UTILITIES MENU



Menu Item	Description
Set Password	Allows a new start up password to be assigned.
Set Sensor Defaults	Allows the default values for a selected type of sensor to be altered.
Configure Port	Allows the COM 1 port settings to be changed
Save Configuration	Saves the current 4500 configuration to a file.
Load Configuration	Loads a previously saved 4500 configuration from file.

HELP MENU



Menu Item	Description
Contents	Displays the contents tab of the 4500 system help file.
Search	Allows you to search the 4500 system help file.
Technical Support	Displays the "Technical Support" information window.
About WIN4500	Displays the "About WIN4500" window. This window displays the software version number.

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REGISTRATION CARD

BUSINESS REPLY SERVICE
Licence No PA210

Gas Measurement Instruments Limited
Inchinnan Industrial Estate
Renfrew
PA4 9BR
Scotland

Name (Mr/Mrs/Ms) _____ Serial Number _____

Company Position _____ Date Purchased _____

Address _____

_____

Phone _____ Fax _____

E-mail _____

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