



DEEP SEA ELECTRONICS PLC

42xx series configuration software for Windows™

Software Manual

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1 DESCRIPTION

The DSE **42xx series** configuration software allows the 42xx family of modules to be connected to a PC. Once connected the various operating parameters within the module can be viewed or edited as required by the engineer. This software allows easy controlled access to these values and also has diagnostic monitoring facilities.

The 42xx range of modules is designed to connect to the modern electronically controlled engine systems which utilise the SAE J1939 protocol standard. Via this connection the module will monitor engine parameters such as Oil pressure, speed and temperature and take the necessary action based on these readings. Such actions are independent of any protection provided by the engine manufacturers control system. Should the engine suffer from a failure mode outside of these measurements the 42xx module will show the relevant diagnostic information on the LCD display. This provided details of the diagnostic code and a text translation.

The Configuration interface should only be used by competent, qualified personnel, as changes to the operation of the module may have safety implications on the panel / generating set to which it is fitted. Access to critical operational sequences and settings for use by qualified engineers, are barred by a PC software security code. Timers are protected by a separate code allowing operator changes to be made.

The information contained in this manual should be read in conjunction with the information contained in the appropriate module documentation. This manual only details which settings are available and how they may be used. The operation of the module is detailed in its own relevant manual.

The P810 (RS232) interface is housed in a robust plastic case terminated in a standard 25 pin D type RS232 connector. It is supplied with an adapter cable to allow connection to the 9 pin D type RS232 connectors as required. Connection to the module is via an FCC 68 RJ45 'CAT5E Network' type cable, this allows for easy replacement in the field should the connecting lead be damaged or lost.

The P810 (USB) interface is housed in a robust plastic case terminated in a USB connector. It is supplied with standard USB cable. Connection to the module is via an FCC 68 RJ45 'CAT5E Network' type cable, this allows for easy replacement in the field should the connecting lead be damaged or lost.

1.1 CLARIFICATION OF NOTATION USED WITHIN THIS PUBLICATION.

 NOTE:	Highlights an essential element of a procedure to ensure correctness.
 CAUTION!:	Indicates a procedure or practice which, if not strictly observed, could result in damage or destruction of equipment.
 WARNING!:	Indicates a procedure or practice that could result in injury to personnel or loss of life if not followed correctly.
 J1939	The 42xx series is designed for connection to a wide range of J1939 engine controllers. This symbol is placed alongside sections of the manual describing use of the J1939 CANbus interface.
 ~	DEEP SEA ELECTRONICS PLC own the copyright to this manual, which cannot be copied, reproduced or disclosed to a third party without prior written permission.

1.1.1 MANUAL STRUCTURE

This manual is designed to assist users of the 42xx series configuration software, this is the common configuration software for all modules of the 42xx range. All software operations such as file handling (loading and saving to disk, reading from and writing to the module) and printing are identical regardless of the module being configured. Some options are only available on the different variants of the 42xx module such as Mains failure detect setting (4220 AMF Modules only).

1.2 PC INTERFACE MODULE 810

The PC interface **810** kit comprises the following:-

- **810** (RS232) Interface Module or **810** (USB) Interface Module
- 25 to 9 way adapter (not USB versions which come with standard USB cable)
- FCC 68 (8 Pin) Connecting Lead
- 1x CD with configuration software

1.3 INSTALLATION INSTRUCTIONS

Minimum system requirements

Processor	486 66Mhz
Operating System	Windows 95,98, Me, 2000, Xp, NT4
Ram	32Mb
Monitor	14 inch SVGA (640x480 resolution)
Fixed disk	10Mb free (80Mb minimum)
Disk drive	CD-ROM or 3½ " for software installation(see note below)
Communications	An RS232 comms port is needed to communicate with the 810 interface and 42xx configuration software (see note below) Or USB port

1.3.1 INSTALLING '42XX SERIES CONFIGURATION SOFTWARE FOR WINDOWS™' PROGRAM FROM SOFTWARE CD

NOTE:- As 42xx series configuration software for Windows™ is a 32-Bit application it will not operate on Windows 2.0, 3.0, 3.1 or 3.11.

NOTE:- Exit all other programs before installing the software. It is recommended that any earlier releases of the software are uninstalled prior to installing this version.

NOTE:- CD ROM is required on at least one PC in order to operate the softwareCD. This softwareCD can be used to create floppy disk installers of the software for use on PCs with no available CD-ROM drive (for instance some laptop PCs). In this instance a 3½" floppy disk drive must be fitted to both PCs.

NOTE:- Some PCs do not have RS232 serial ports fitted. Instead they are fitted with USB ports. To use these in conjunction with the P810 interface you must use a USB to RS232 converter (not of DSE supply). It is not recommended to use these in conjunction with Windows95, as USB support was not complete in this operating system.

NOTE:- There is a USB version of the P810 interface available, this is recommended for use on PC's fitted with USB ports. The USB driver must be correctly installed on the machine prior to using the P810 software. The driver will install a 'virtual COM port' for the USB P810 – this should be selected as the COM port in the 'setup' tab.

Insert the Software CD into the CD-ROM drive on the PC. The CD will then Auto-run if this feature is enabled on your PC.

Alternatively

Double click on **My Computer** :



Then double click on **CD-ROM Drive**:



There will be a short delay while the CD-ROM is accessed, then the install program will run



Click on the 'Install 42xx series' button to install the software onto your PC in its own folder (directory). It will also create 'START MENU' items.

NOTE:- The Software CD will also allow the user to create a set of floppy disks to enable installation on PC's without CD-ROM drives. Full software manuals are also included on the Software CD in Adobe Acrobat™ PDF format.

1.3.2 INSTALLING '42XX SERIES CONFIGURATION SOFTWARE FOR WINDOWS™' PROGRAM FROM FLOPPY DISKS.

NOTE:- As 42xx series configuration software is a 32-Bit application it will not operate on Windows 2.0, 3.0, 3.1 or 3.11.

NOTE:- Exit all other programs before installing the software. It is recommended that any earlier releases of the software are uninstalled prior to installing this version.

Insert Disk 1 into the 3½ " floppy disk drive.

Double click on **My Computer** :



Then double click on 3½ " floppy:



There will be a short delay while the floppy disk is accessed, then the disk contents will be displayed.

Double click on **Setup.exe**:



'Setup' will now automatically install 42xx series configuration software onto your PC in its own folder (directory). It will also create 'START MENU' items.

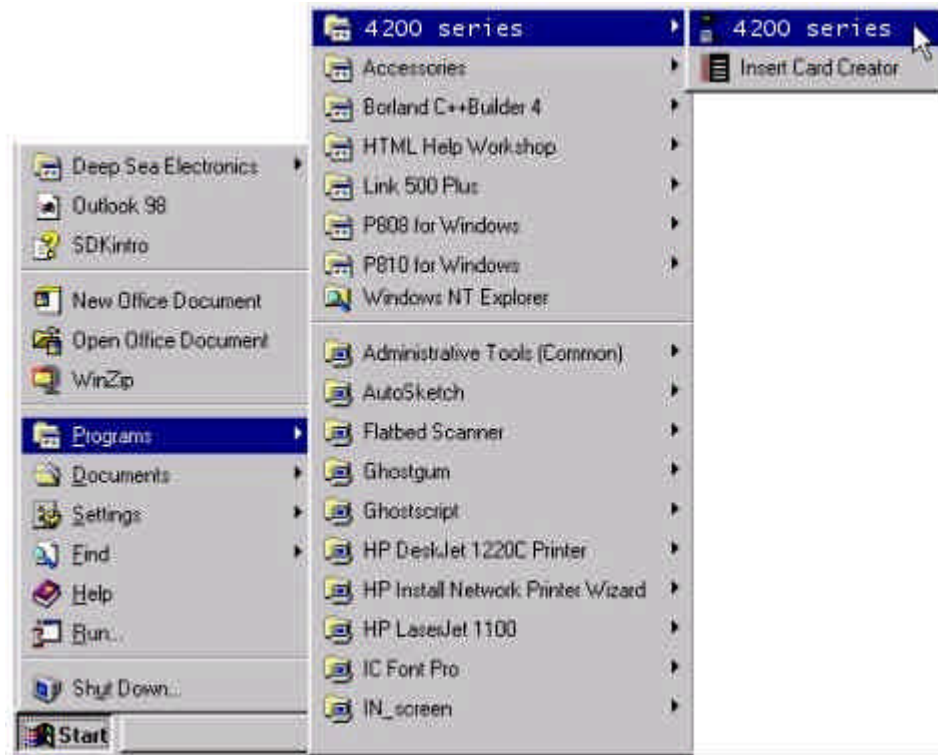
NOTE:- Alternatively, Select **Start**, then select **Run**, then type A:\SETUP.EXE into the box provided, then press the **Enter** key.

To Run 42xx series configuration software For Windows program

Press the:

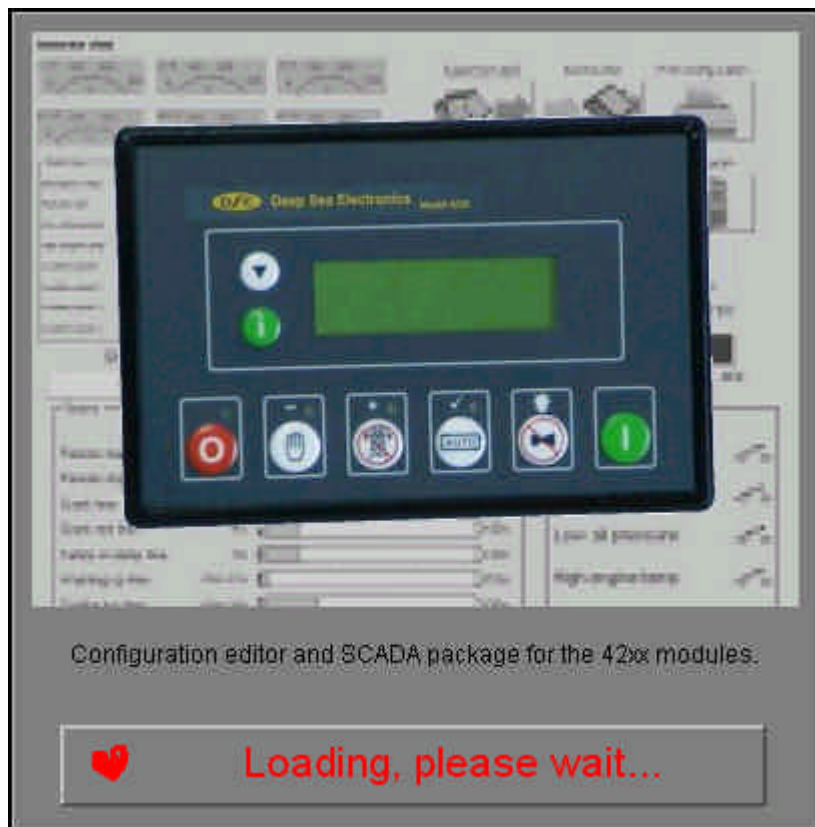


And then select 'Programs' - '42xx series' as shown below:-

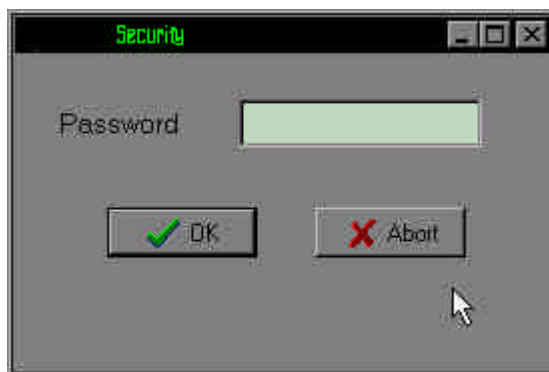


NOTE: - Alternatively locate the '42xx' Directory on your hard drive and Click on the icon.

The screen will then display: -



The password page will appear after a short delay.



The software provides three levels of password protection. The first level is the operator level, if the operator password is entered it will only be possible to edit the Timers not the module configuration. In addition, operator level only allows the creation of new configuration files, existing files cannot be over-written. The second level of password protection is the technician Level, if this password is entered all of the module functions can be configured.

The third level of password is the Engineer level, if this password is entered all of the module functions can be configured and the Module time and start counters can be adjusted. Passwords for all levels can also be changed with this level.

It is intended that the technician and engineering passwords be given to qualified engineers who are responsible for initial configuration of the unit, or modification of settings at a later stage.

The operator password is intended to be given to personnel who will not need to be altering the configuration of the module, but may need to visit a controller and modify timer settings, record these changes in a new file and view diagnostic information from the module.

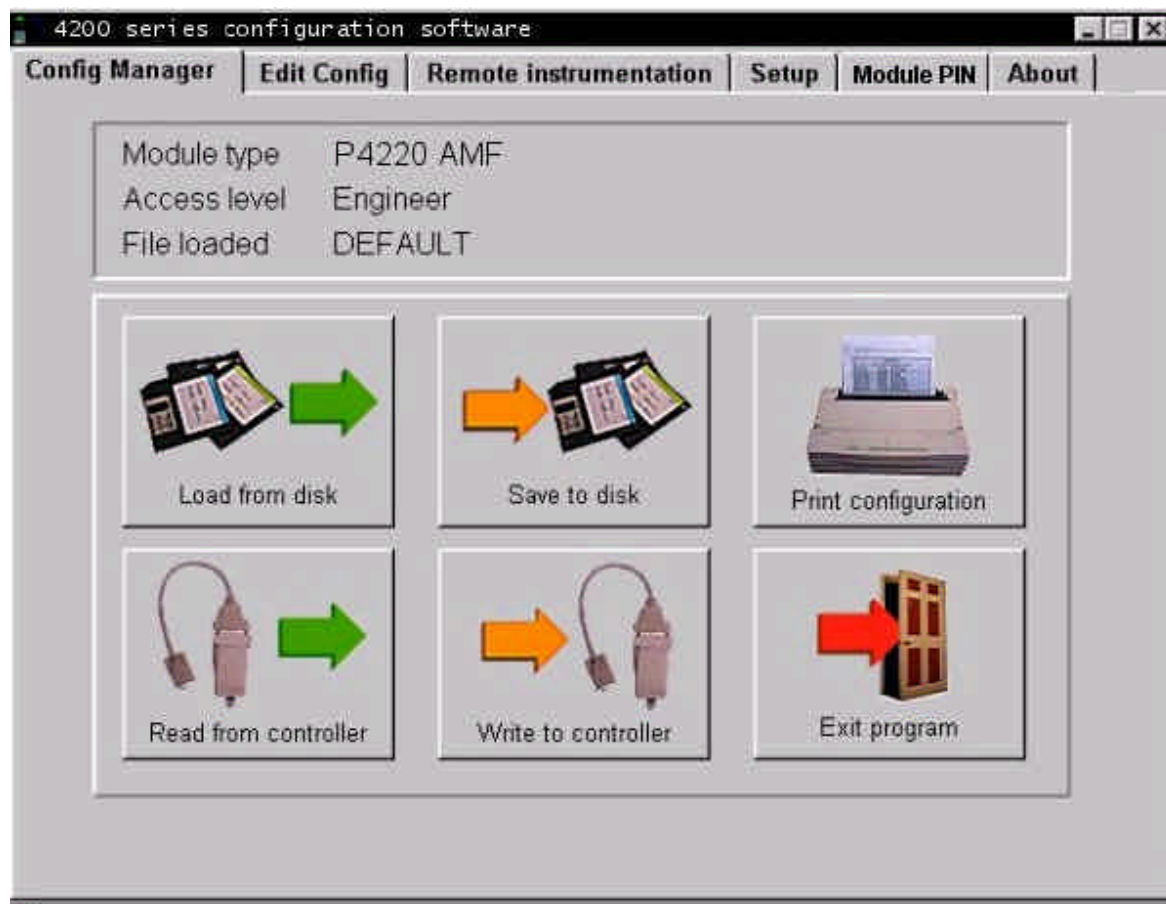
Users without a password will not be able to gain access to the software at all.

Enter the correct password for the required access level then; Click 'OK' or press the ENTER key.

 NOTE:- The default Engineer password is blank and when a password is requested, Click 'OK' or press the ENTER button.
--

2 CONFIG MANAGER MENU

Once loading the '**Main**' Menu is now displayed.



Module Type:- This indicates the type of module for which the 42xx series software is currently configured. This will automatically be selected to the correct module when a configuration file is 'Loaded' from disk or 'Read' from the module. It can also be changed from the '*Edit Configuration*', '*Misc*' menu.

Access Level:- This indicates the current level of access to the software. Access is gained depending on the password typed to enter to program on start-up. It is the access level that determines what configuration options are available.

File Loaded:- This indicates the name of the configuration file currently loaded into the 42xx series software. If the configuration was 'Read' from the module then '*FROM MODULE*' will be displayed.

Load from Disk:- This is used to load an existing configuration from disk into the 42xx series software. The file can then be edited (if required) and then 'Written' to the module. To load a file, simply click this button and enter the name of the file to be loaded in the dialog box. Then click 'OK'. The '*File Loaded*' will then be indicated.

Save to Disk:- This is used to save the current configuration file to disk. The required filename for the configuration can be typed in the dialog box. Then click 'OK'.

Print Configuration:- This is used to produce a print-out of the current configuration. A list of all the settings will then be produced.

Read from Controller:- This is used to 'Read' the configuration which exists in the module. The module must be connected to the PC via the 810 interface and have a DC supply feeding it. It is possible to read from the module while the generating set is running. Clicking the 'Read' button will

transfer the current configuration to the 42xx series software to allow the setting to be inspected or modified.

Write to Controller:- This is used to write a new configuration to the module. To write to the module it must be connected to the PC via the 810 interface and be fed from a suitable DC supply. Additionally the module must be in the correct operating mode in order for re-configuration to be accepted.

Should the module not be ready to receive data i.e. generator not at rest in stop mode, the software senses that the engine is running and a message at the bottom of the screen will be displayed. Steps should then be taken to ensure that the engine is at rest and the module is in the 'STOP' mode before attempting to write to the module.

Exit:- This is used to exit the 42xx series software and return to windows. If any configuration files are open which have not been saved, the software will query if it is OK to continue or if they need to be saved.



NOTE:- It is possible to protect the modules configuration using a four digit pin number. If set, this prevents the module's configuration being changed until the pin number has been correctly entered. The 42xx software will automatically request this pin number if required.

3 EDIT CONFIG MENU

3.1 EDIT CONFIGURATION TAB

This menu allows the module configuration to be changed, such that the function of Inputs, Outputs and LED's can be altered. System timers and level settings can also be adjusted to suit a particular application.

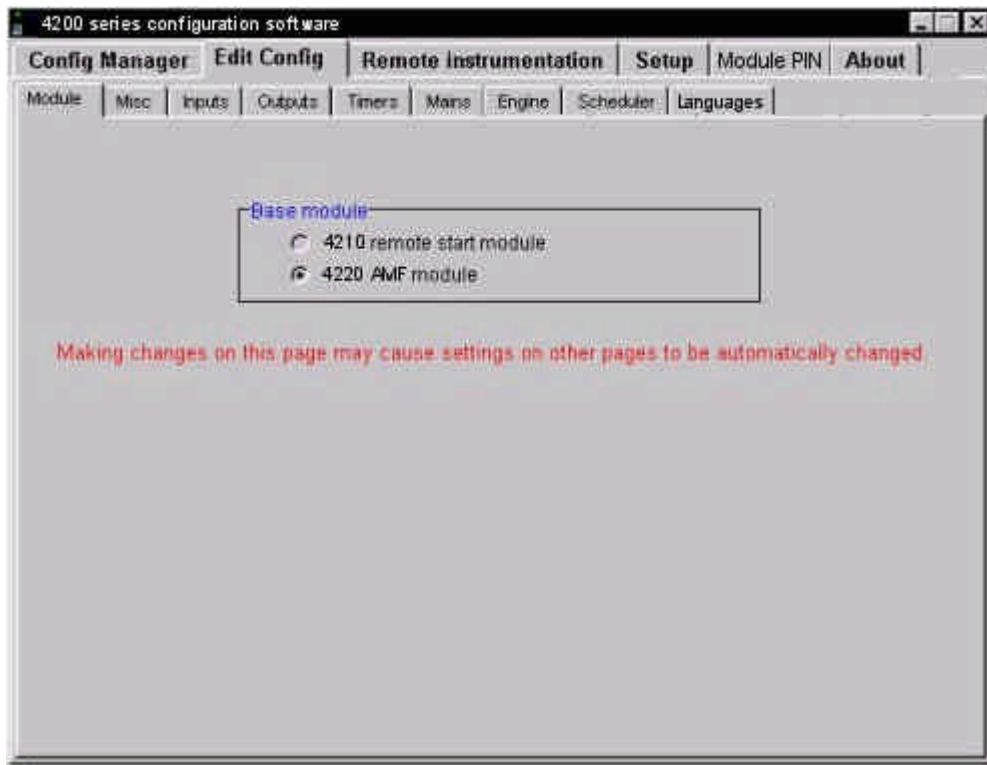
Access to the various configuration parameters depends on the password entered when the program was started. If the Operator password was entered, then selecting the Edit Configuration option will take the user directly to the Edit Timers page as this is the only editable section with operator level clearance.

If the Technician or Engineering level password was entered then full access to the settings is possible.

Making changes on one 'tab' may influence the availability of selections available on other tabs. The software has been designed for the configuration to be created/altered in a left-right tab order to ease the configuration process.

3.1.1 EDIT MODULE

This menu allows the user to change the type of module to be configured. This menu is used to determine which options are presented to the user elsewhere in the configuration. The following is displayed:



NOTES:-

It will not be possible to send a configuration for the wrong module type to a different module. E.g. You cannot send a 4210 configuration to a 4220 module. However, it is possible to base a new config on an existing config and change the options to suit the new module.

Item	Function
Base Module	These settings are used to select the base module on which the configuration is based. Module Type - ☐ = 4210 Remote Start Module ☒ = 4220 Automatic mains failure module This setting determines whether the configuration file is for a 4210 or 4220 module. Depending upon selection, non-relevant options are hidden and the software will not allow the operator to 'Write' the wrong configuration file to the 'wrong' module type.

3.1.2 EDIT MISCELLANEOUS ITEMS

This menu allows the user to change the nominal operating parameters and also select the modules special operating modes, according to individual requirements. The following is displayed:

The screenshot shows the '42xx configuration software' window with the 'Edit Config' tab selected. The 'Misc' sub-tab is active, displaying the 'Module identification' section with 'Site Identity' set to 'Crystal Lakes' and 'Genset identity' set to 'Standby Generator #1'. Below this are three sections: 'Sensing options' with 'J1939 engine type' set to 'Generic J1939'; 'AC options' with 'AC System' set to '3 phase, 4 wire'; and 'Starting options' with 'Enable mains failure detection' checked and 'Number of start attempts' set to 3. The 'Miscellaneous options' section at the bottom has 'Enable fast loading feature' checked, 'Enable immediate mains dropout' unchecked, and 'Allow module to 'sleep' when in STOP mode' unchecked.

Section	Parameter	Value
Module identification	Site Identity	Crystal Lakes
	Genset identity	Standby Generator #1
Sensing options	J1939 engine type	Generic J1939
	AC System	3 phase, 4 wire
Starting options	Enable mains failure detection	☒
	Number of start attempts	3
Miscellaneous options	Enable fast loading feature	☒
	Enable immediate mains dropout	☐
	Allow module to 'sleep' when in STOP mode	☐

Miscellaneous Description

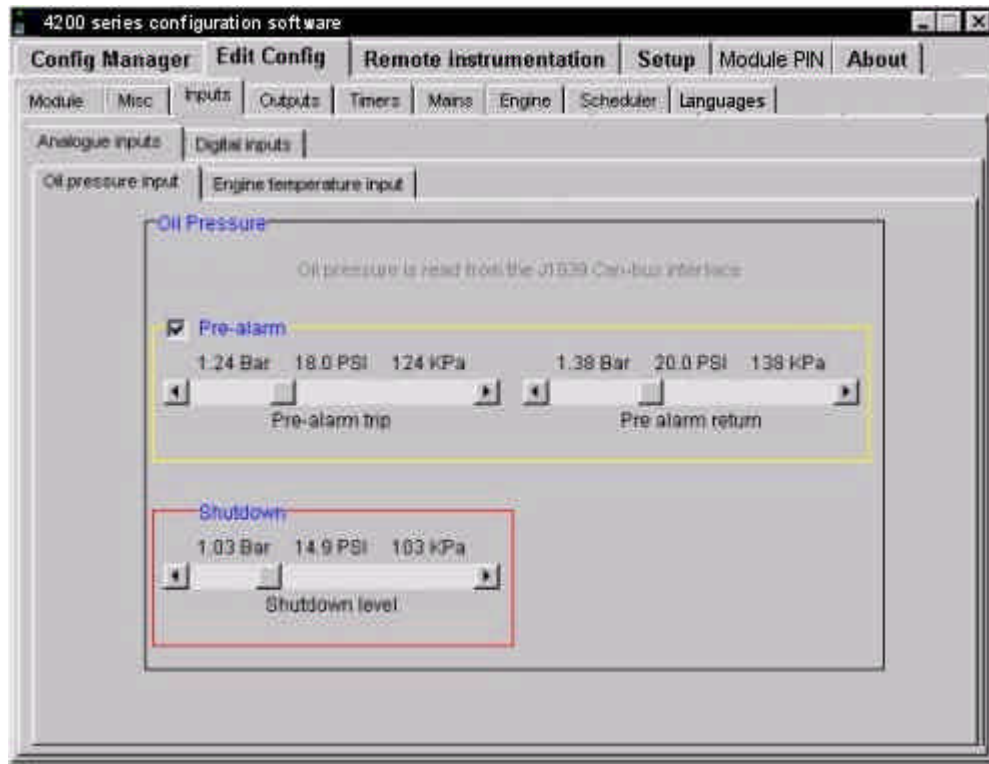
Item	Function
Configuration description	Allows a description to be given to the module's configuration file. This allows for easy reference to what the configuration is used for, who configured it and when.
J1939 options	 J1939 CanBus Engine type - Generic j1939 – Basic J1939 is available when used in conjunction with an SAE J1939 enabled engine. - Other engine types allow selection of engine manufacturer specific options such as ECU enable outputs and enhanced J1939 instrumentation.  NOTE:- A J1939 engine ECU must be used with the 42xx module. Non J1939 ECU's are not supported by the 42xx module.
AC System	Mains AC System (4220 modules only) This is used to select the type of mains supply that the 4220 module is connected to. 1 phase 2 wire 2 phase 3 wire 3 phase 3 wire 3 phase 4 wire
Starting Options	Enable Mains Failure Detection - (4220 modules only) ☐ = The module will NOT monitor the incoming AC mains supply for failure. The AC mains instrumentation will still be active however. ☒ = The module WILL monitor the incoming AC mains supply. Should the supply go out side of limits the module will initiate its automatic mains failure sequence. Number of Start attempts - This value is the number of times the module will attempt to start the generator. Should the generator start, the module will not attempt further starts. If the generator does not start after the final attempt, the module will give a 'Fail to start' alarm.

Item	Function
Miscellaneous Options	These settings are used to select a range of different functions:- Enable Fast Loading feature - ☐ = Normal Operation, the safety on timer will be observed in full. This feature is useful if the module is to be used with some small engines where pre-mature termination of the delay timer can lead to overspeed alarms on start up. ☒ = The module will terminate the safety on timer once all monitored parameters have reached their normal settings. This feature is useful if the module is to be used as a standby controller as it allows the generator to start and go on load in the shortest possible time.  NOTE:- It is only recommended to Enable Fast Loading on systems where steps have been taken to ensure rapid startup of the engine is possible. Ie When fitted with engine heaters, electronic governors etc. Enable Immediate Mains Dropout - (4220 modules only) ☐ = Normal Operation, in the event of a mains failure the module will attempt to maintain the supply to the load for the incoming AC mains supply until the generator is available to go on load. In the event of a generator failure the module will default back to the incoming AC mains supply. This provides a 'fail-safe' system, ensuring that in the event of a system failure the load will still be fed from the AC mains supply. ☒ = As soon as the module detects a mains failure the mains contactor or breaker relay will be opened to remove the supply from the load. This is to prevent damage to the load in case of a single-phase failure, especially useful if the load is a 3-phase motor or pump. The supply to the load will then be fed from the genset once it is available. In the event of a generator failure the module will open the generator relay and remove the supply to the load until either the mains supply is restored or the generator is restarted. Enable 'sleep' when in STOP mode - ☐ = Normal Operation, module never 'sleeps'. ☒ = The module will enter a power saving 'sleep' mode when placed in STOP mode. The power saving feature is activate 1 minute after the module enters STOP mode provided that there is no movement monitored from the engine and there is no activity on the P810 configuration port during this time. Any detected activity during this time will prevent 'sleep' from activating until STOP mode is entered again.  NOTE:- 'Sleep' mode is a power saving mode allow the module to be connected to equipment without the need for a separate static charger system. The module can be woken by pressing any mode button. To re-configure the module using the P810 interface you must first wake the 42xx module from 'sleep' mode.  CAUTION!: Even though the 42xx module uses only minimal current when in 'sleep' mode – it is recommended that the battery is disconnected to prevent excessive discharge if the system is to be left unused for an extended length of time.

3.1.3 EDIT CONFIGURABLE INPUTS

This menu allows the configurable inputs to be changed to suit the users requirements. The following is displayed: -

EDIT ANALOGUE INPUTS TAB



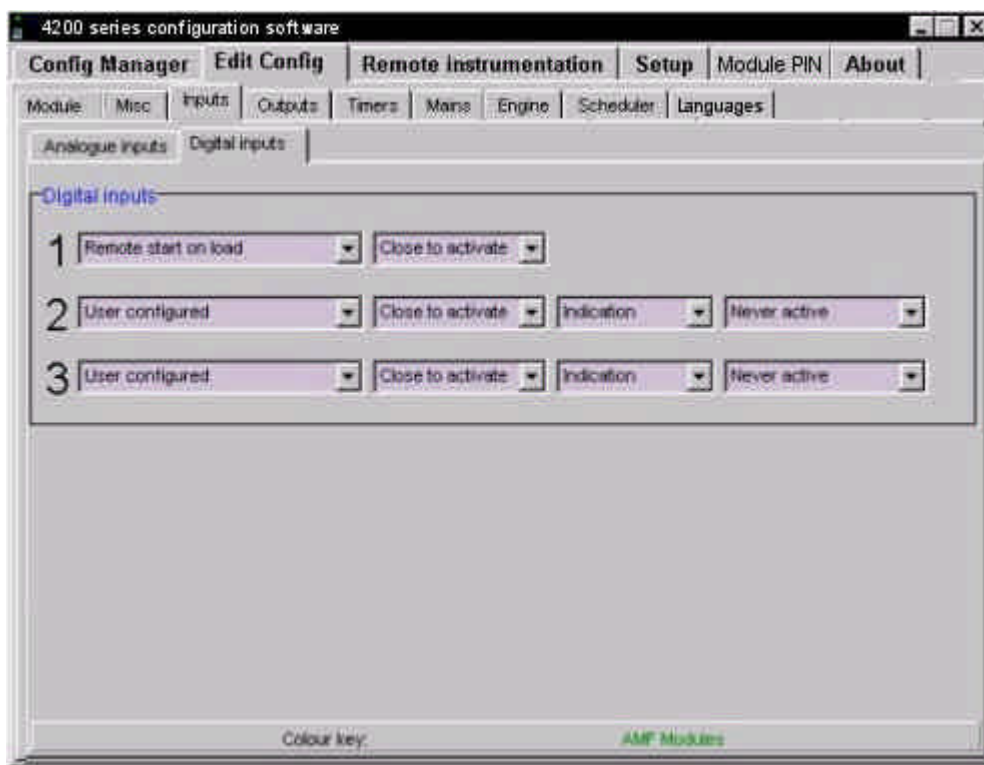
Function	Description
Oil Pressure settings	This section is used to configure the Oil Pressure settings  H939 Oil pressure is read from the engine's ECU on the CANbus datalink. Pre-Alarm:- ☐ = Engine Low Oil Pressure will NOT give a pre-alarm warning ☒ = Engine Low Oil Pressure WILL give a pre-alarm warning in the event of the engine oil pressure falling below the displayed '<i>Oil Pressure pre-alarm</i>' value. The '<i>Oil Pressure pre-alarm</i>' value can be adjusted to suit user requirements. The oil pressure must return to above the '<i>oil pressure return</i>' setting before the 42xx module will consider that the oil pressure is back with in limits and cancel the pre-alarm. Shutdown - Engine oil pressure will give a shutdown alarm in the event of the engine oil pressure falling below the displayed '<i>oil pressure trip</i>' value. The '<i>oil pressure trip</i>' value can be adjusted to suit user requirements.

 **NOTE:-**  **H939** It is recommended that the oil pressure trip points are set higher or the same as the engine ECU trip points (If Applicable).

Function	Description
High Coolant Temperature settings	This section is used to configure the Coolant Temperature settings.  H939 Coolant temperature is read from the engine's ECU on the CANbus datalink. Pre-Alarm:- ☐ = Engine High Coolant Temperature will NOT give a pre-alarm warning ☒ = Engine High Coolant Temperature WILL give a pre-alarm warning in the event of the engine coolant temperature rising above the displayed '<i>Coolant Temperature pre-alarm</i>' value. The '<i>Coolant temperature pre-alarm</i>' value can be adjusted to suit user requirements. The Coolant temperature must return to below the '<i>coolant temperature return</i>' setting before the 42xx module will consider that the coolant temperature is back with in limits and cancel the pre-alarm. Shutdown - Coolant temperature will give a shutdown alarm in the event of the engine coolant temperature rising above the displayed '<i>coolant temperature trip</i>' value. The '<i>coolant temperature trip</i>' value can be adjusted to suit user requirements.

 **NOTE:-**  **H939** It is recommended that the engine temperature trip points are set lower or the same as the engine ECU trip points (If applicable).

EDIT DIGITAL INPUTS TAB



NOTE:- Each of the auxiliary inputs has the same selection choices, allowing flexibility. However, only one of the fixed input functions can be used at any one time. For example only one of the inputs can be configured to be 'remote start'. The User Configurable option is the exception to this rule, and allows any number of inputs to be used as Warnings, Shutdowns or as an electrical trip input

Polarity

The polarity of the input switching can be configured to be either **"Close to Activate"**, this is a normally open switch, and closes to negative when activated. Alternatively **"Open to Activate"**, this is a Normally Closed switch to negative, and opens when activated.

INPUT selection

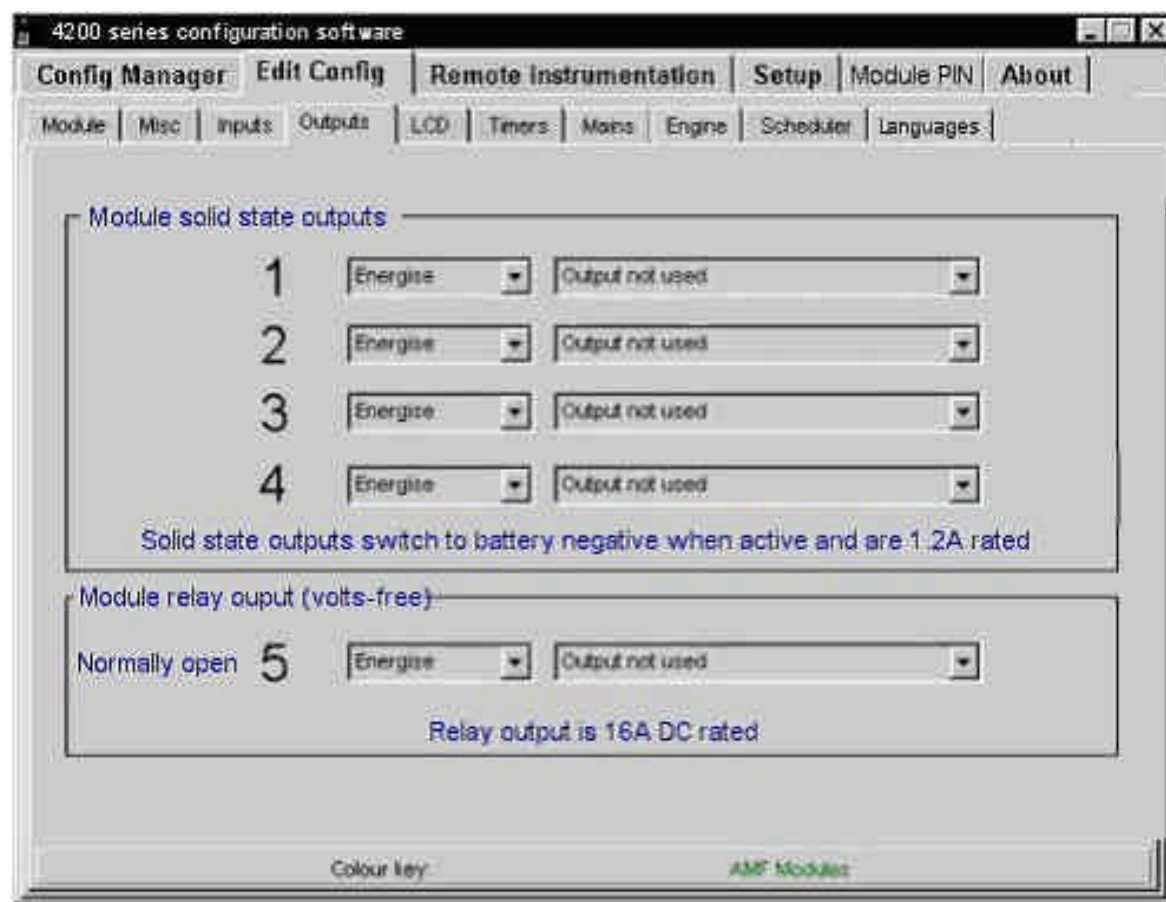
Function	Description
User Configured	The input is configured to perform an auxiliary function, this may be any of the following:- Warning (Alarm only, no shutdown) Shutdown (Alarm and shutdown) Indication (No Alarm and no shutdown) Electrical Trip (Alarm/off-load generator followed by shutdown after cooling) The function also has an activation time associated with it chosen from the following list:- Never active -This switches off the input if not in use. Always active -The input selected to be an indication or alarm even when the module is in the STOP/RESET MODE. Active from starting -The Auxiliary input is only active once an attempt to start the generator is made. It will remain active until the generator is at rest again. Active from safety on -Auxiliary inputs are only active once the Safety On timer has timed out. This allows a delay on start up for faults, such as Oil Pressure and High Engine Temperature Warnings, or other shutdown conditions which require a delay during start-up, such as Under-voltage.
Alarm mute	When active, this will disable an output configured to 'audible alarm', without resetting the module's alarm condition.
Lamp Test	This input is used to provide a test facility for the front panel indicators fitted to the 42xx module. When the input is activated all LED and LCD indicators will illuminate.
Panel Lock	This input is used to provide security to the installation. If the Panel lock input is active, the module will not respond to operation of the Mode select or start buttons. This allows the module to be placed into a specific mode (such as Auto) and then secured. The operation of the module is not affected and the operator will still be able to view the various instrumentation pages etc. (<i>Front panel configuration access is barred while system lock is active</i>).
Alarm reset	This input can be used to reset the module's alarm condition, providing that the fault condition is no longer active. The module's operating mode is unchanged. For instance if the module is in AUTO mode with an alarm present, and the fault condition itself has been cleared, then activating remote reset will reset the alarm, leaving the module in AUTO mode.  WARNING!: If the module is in auto mode and a remote start input is present (or in the case of 42xx, mains is not available), the engine will restart following a remote reset command

Function	Description
Remote Start on load	If this input is active, the 42xx will operate thus:- To use this function the 42xx should be placed in the AUTO mode. The module will perform the start sequence as described earlier in this manual.
Remote Start off load	If this input is active operation will be similar to the 'Remote Start on load' function except that the generator will not be instructed to take the load. This function can be used where an engine only run is required e.g. for exercise.
Simulate Mains available	This function is provided to over-ride the 4220 module's internal monitoring function. If this input is active the module will not respond to the state of incoming AC mains supply unless the monitored AC mains supply is out of limits AND this input is inactive. This can be used to control the operation of the generator during a mains failure by allowing generator operation only if equipment operation requires the genset to run

3.1.4 EDIT MODULE OUTPUTS

This menu allows the configurable output to be changed to suit the users requirements. The following is displayed:-

EDIT Module outputs



NOTE:- Each Auxiliary output has the same selection choices, allowing a combination of different uses.

Polarity

Each of the outputs can be configured as:

a) Energised

Normally open relay contact which closes on activation.

b) De-energised

Normally closed relay contact, which opens on activation.

NOTE:- It is recommended that the relay output (5) is configured to 'ECU power' and this is used to feed the power supply requirements of the engine ECU. This will then ensure that the engine ECU is powered off when the engine is rest, thus preventing battery discharge. Check engine ECU information for the correct method of applying power. Details may also be found in the connection diagrams in the relevant 42xx Operators Manual.

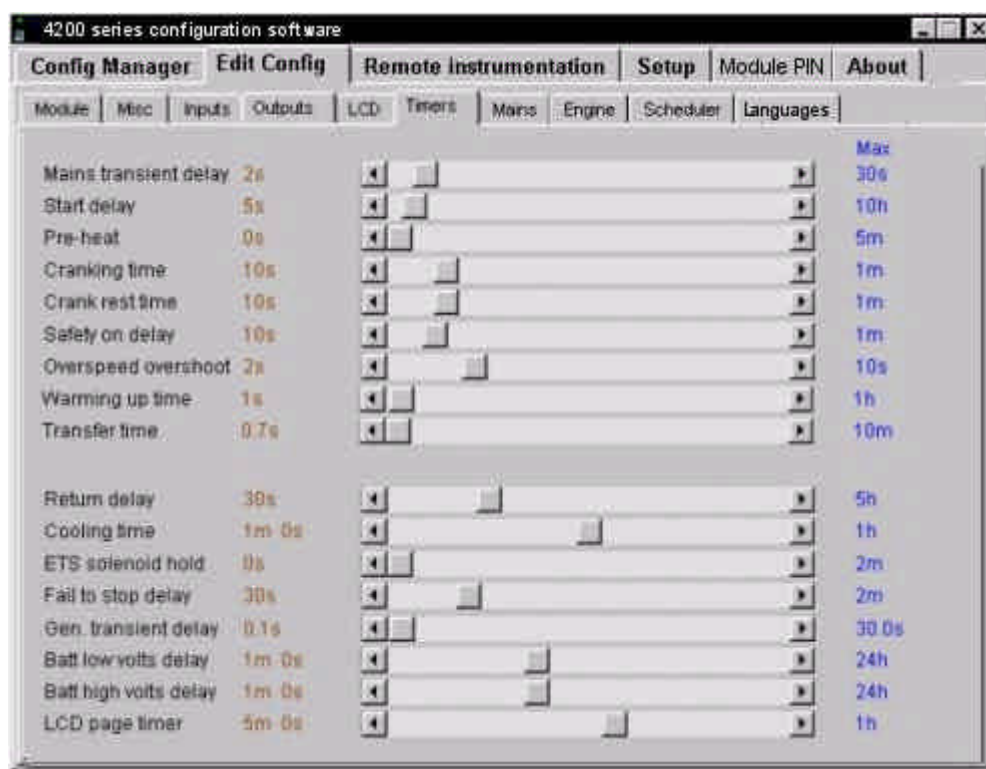
Output selection

Function	Description
Output Not Used	The output is not used.
Audible alarm	This output is intended to drive an external Klaxon or alarm indicator and will be active upon the module triggering a warning, shutdown or electrical trip alarm. This external alarm can be 'muted', without resetting the module's alarm condition by activating an auxiliary input that has been configured to "Alarm Mute".
 J1939 CAN ECU error	The engine ECU has indicated that a warning alarm is present.
 J1939 CAN ECU fail	The engine ECU has indicated that a shutdown alarm is present.
 J1939 CAN data fail	The 42xx module is unable to communicate with the engine ECU.
Close Generator	This output source is intended to be used to control the load switching device. Whenever the 42xx module selects the generator to be on load this control source will be active.
Close Mains	This output source is intended to be used to control the load switching device. Whenever the 4220 module selects the mains to be on load this control source will be active.
Common alarm	The output indicates that a warning, electrical trip or shutdown alarm has been activated. Reset rules as above, depending on whether it is a Warning or a Shutdown fault.
Common Shutdown alarm	The output indicates that a shutdown alarm has been activated. This output can only be reset by removal of the fault and by then pressing the Stop Reset button or by using an external 'Alarm Reset' Input.
Common Warning alarm	The output indicates that a warning alarm has been activated. This output is normally self-resetting on removal of the fault. However, it is possible to configure the module such that the warning alarms are latching, if so this alarm will need to be reset either by pressing the Stop Reset button or by using an external 'Alarm Reset' Input.
Energise to stop	The output controls the fuel solenoid on an ETS type generator, energising for the time period selected in the Edit Timer Menu. The normal fuel output (pin 4) should not be connected to the fuel solenoid, however it can be used for controlling panel instruments and other functions required whilst the engine is running.
Fuel on	The output is used to operate any fuel valves which need to be opened for the engine to run. It can also be used to power up instruments and other systems which should be operating when the engine is running.
Generator Available	This output indicates when the generator is ready to accept load, i.e. after safety on and warm up timers have timed out. It could be used to connect to an Automatic Transfer System or PLC to give a signal that the set is available.
 J1939 ECU Enable	Normally used to control a volts free relay, used to enable/disable the engine ECU.
Louvre control	The output controls the opening of the louvres on engine starting and closure when engine has stopped.
Mains Failure	This output indicates that the module has sensed that a failure of the incoming AC mains supply. This output will become active whenever the mains voltage or frequency goes out of limits, or if the auxiliary mains failure input active (if used) and the mains transient timer has expired.

Function	Description
Pre-heat (during preheat timer)	The output controls the pre-heater. Pre-heat output is available for the duration of the pre-heat timer, which terminates prior to cranking.
Pre-heat (until end of cranking)	The output controls the pre-heater. As 'Pre-heat (during preheat timer)' mode but pre-heat is also available during cranking.
Pre-heat (until end of warming)	The output controls the pre-heater. As 'Pre-heat (until safety on)' but pre-heat continues to be available until the warm-up timer has elapsed.
Pre-heat (until safety on)	The output controls the pre-heater. As 'Pre-heat (until end of cranking)' but pre-heat is also available while waiting for the delayed alarms to become active.
Start relay energised	The output mimics the operation of the start relay. Can be used to control external logic circuitry.
System in Auto Mode	The output indicates that the module is in the Auto mode.
System in Manual Mode	This output indicates that the module is in the manual mode.
System in Stop Mode	The output indicates that the module is in the Stop mode.
System in Test Mode	This output indicates that the module is in the test mode.

3.1.5 EDIT SYSTEM TIMERS

This menu allows the configurable system timers to be changed to suit the users requirements. The following menu is displayed:-



NOTES: - Timers can be adjusted by clicking on either the up or down arrow or by clicking on the bar and dragging the bar to the correct time.

As the timers can be accurately set to exact times, it is possible to initially configure the module with the timers reduced to allow rapid testing of the finished generating set. Once the set is ready for a final witness test, it is just a simple matter of entering the specified timer settings and writing them to the module.

Timer Descriptions

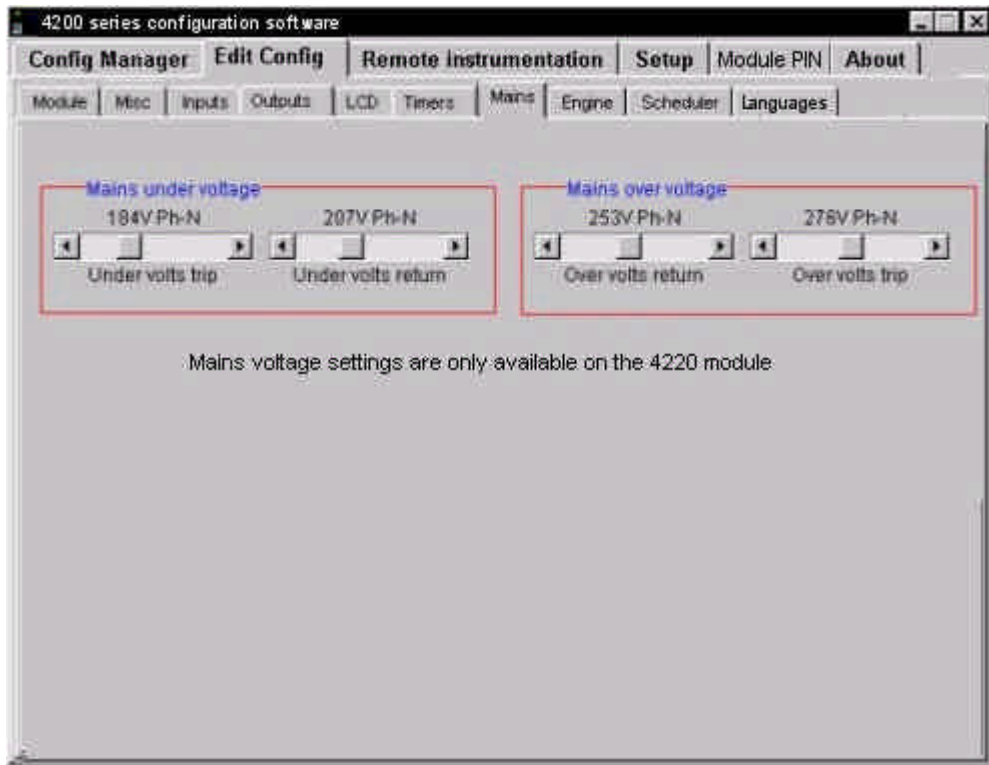
Timers	Function
Mains Transient Delay	<i>(Only available on 4220 module)</i> This timer dictates how long a mains anomaly must be present before the module will respond to it. This can be used to prevent nuisance tripping when switching loads etc.
Start delay	This timer dictates how long the module will wait after it has received a remote start signal (or mains failure signal – 4220 only) before it will attempt to start. This prevents unnecessary starting on a fluctuating mains supply, etc.
Pre-heat	This timer dictates the duration that the pre-heat output will be active before an attempt is made to start the engine. Once this timer has expired cranking will commence.

Timers	Function
Cranking time	This is the maximum amount of time that the module will energise the starter motor for during starting attempts once the starter has engaged.
Crank rest time	This is the amount of time the module will wait for between start attempts. This is to allow the starter motor to cool and the starter batteries to recover.
Safety on delay	This timer dictates how long the module will ignore the Low oil pressure, High Engine Temperature, Underspeed, Undervolts and any other inputs configured as active from safety on. It allows the values such as oil pressure to rise to their operating values on starting without triggering an alarm. Once the timer has expired all alarm conditions are monitored again. If configured to use 'fast loading', should all the monitored conditions, such as oil pressure, come to the expected state prior to the end of the safety on timer, the timer will be terminated prematurely ensuring maximum protection as soon as possible.
Overspeed Overshoot	This timer is used to prevent nuisance tripping on generators where a slow response governor allows the engine to overspeed slightly during start-up. This setting allows the normal overspeed shutdown level to be exceeded by a percentage (up to a maximum of 10% - see 'Engine', 'Speed settings') for the duration of the of this timer. Should the engine speed exceed this temporarily elevated level it will be shutdown. Once the overspeed timer has expired the overspeed shutdown value is restored to the normal level.  NOTE:- This is not a delay on overspeed shutdown, only a temporary raising of the overspeed value, therefore overspeed protection is not compromised.
Warm up timer	This timer is initiated once the engine is up and running. It delays loading the generator until it has stabilised. Once this timer has expired the 'Close generator' signal will be given and the generator is available to be loaded.
Transfer time	This is used to allow for fixed duration transfer breaks when switching from mains to generator and back. It can be used to ensure that the supply is removed from the load for a fixed period of time to allow pumps/motors to come to rest etc.
Return delay	This timer dictates how long the module will wait before it will unload the generator (back to the mains supply if AMF) and initialise it's run-on and shutdown cycle. This is to ensure that the mains supply has stabilised before transferring the load back to mains.
Cooling Time	This is the time the generator is to run off-load once the load transfer signal has ceased. This gives the engine time to cool down before shutdown.
ETS Solenoid hold time	This timer is used if the unit is configured to operate an Energise to stop engine. It dictates the duration that the ETS output will remain active after the module has detected the engine has come to rest. If the ETS output is not configured, this timer will still operate, preventing an immediate restart.
Fail to stop delay time	Once the module has given a shutdown signal to the engine it expects the engine to come to rest. It monitors the Oil pressure and speed sensing sources and if they still indicate engine movement when this timer expires a 'Fail to stop' alarm signal is generated.
Generator Transient delay	This timer dictates how long a generator anomaly must be present before the module will respond to it. This can be used to prevent nuisance tripping when switching loads etc.

Loading /Stopping	Function
Battery Low Volts Delay	This timer dictates how long the module will wait before it will give a low DC plant voltage alarm in the event of the plant voltage falling below low voltage trip level. This can be used to prevent nuisance alarms when using poorly regulated power supplies and battery chargers, and during engine cranking.
Battery High Volts Delay	This timer dictates how long the module will wait before it will give a high DC plant voltage alarm in the event of the high voltage trip level being exceeded. This can be used to prevent nuisance alarms when using poorly regulated power supplies and battery chargers.
LCD Page timer	This timer dictates how long after the last button press the module will wait on the current screen before 'jumping' back to the initial display of module status.

3.1.6 EDIT MAINS LEVELS

This menu allows the mains sensing configurable trip values to be edited to the users required levels. The following menu is displayed:



NOTE: Mains sensing is only available on the 4220 modules

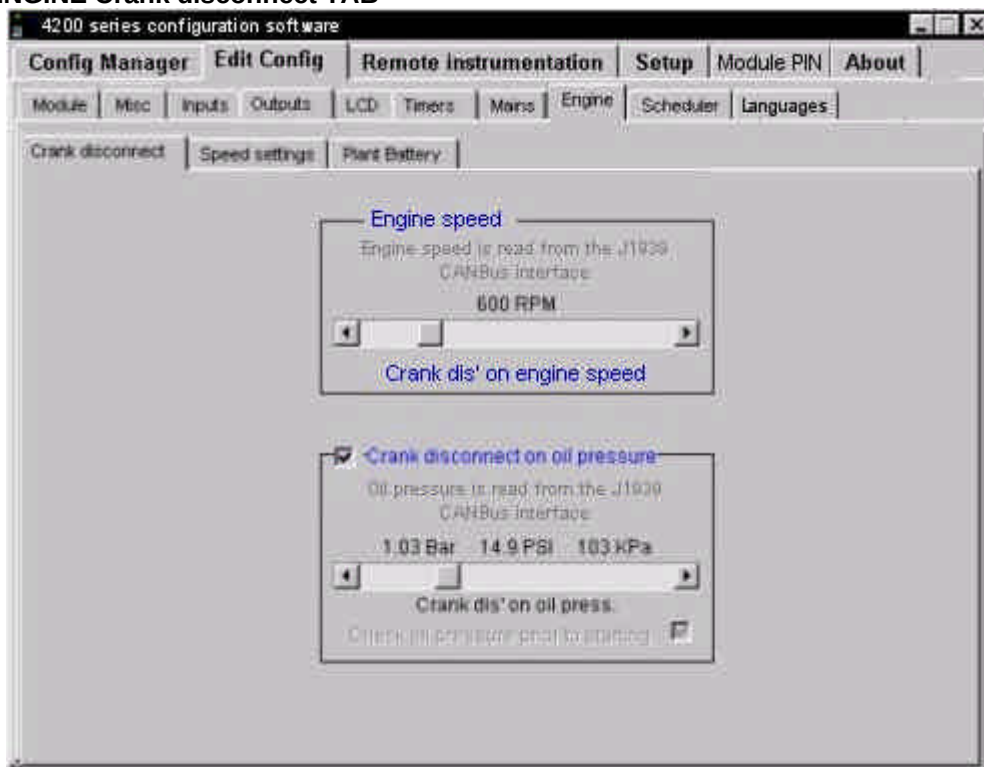
Levels Description

Level	Function
Mains Under voltage	These settings are used to configure the mains under voltage alarm:- Under Voltage Trip - This is the minimum voltage that the 4220 will consider the incoming AC mains supply to be within limits. Should the input fall below this value the module will indicate a mains failure and function accordingly. Under Voltage Return - This is the voltage above the under voltage trip that the incoming mains supply must return to before the 4220 module will consider that the supply is back with in limits. (I.e. With a UV trip of 184.0V and a UV return of 207.0V, the mains voltage must return to 207.0V following an under voltage event to be considered within limits.)
Mains Over voltage	These settings are used to configure the mains Over voltage alarm:- Over Voltage Trip - This is the maximum voltage that the 4220 will consider the incoming AC mains supply to be within limits. Should this value be exceeded the module will indicate a mains failure and function accordingly. Over Voltage Return - The incoming mains supply must return to this voltage before the 4220 module will consider that the supply is back with in limits. (I.e. With an overvoltage trip of 276.0V and a overvoltage return of 253.0V, the mains voltage must return to 253.0V following an over voltage event to be considered within limits.)

3.1.7 EDIT ENGINE LEVELS

This menu allows the engine configurable trip values to be edited to the users required levels. The following menu is displayed:

EDIT ENGINE Crank disconnect TAB

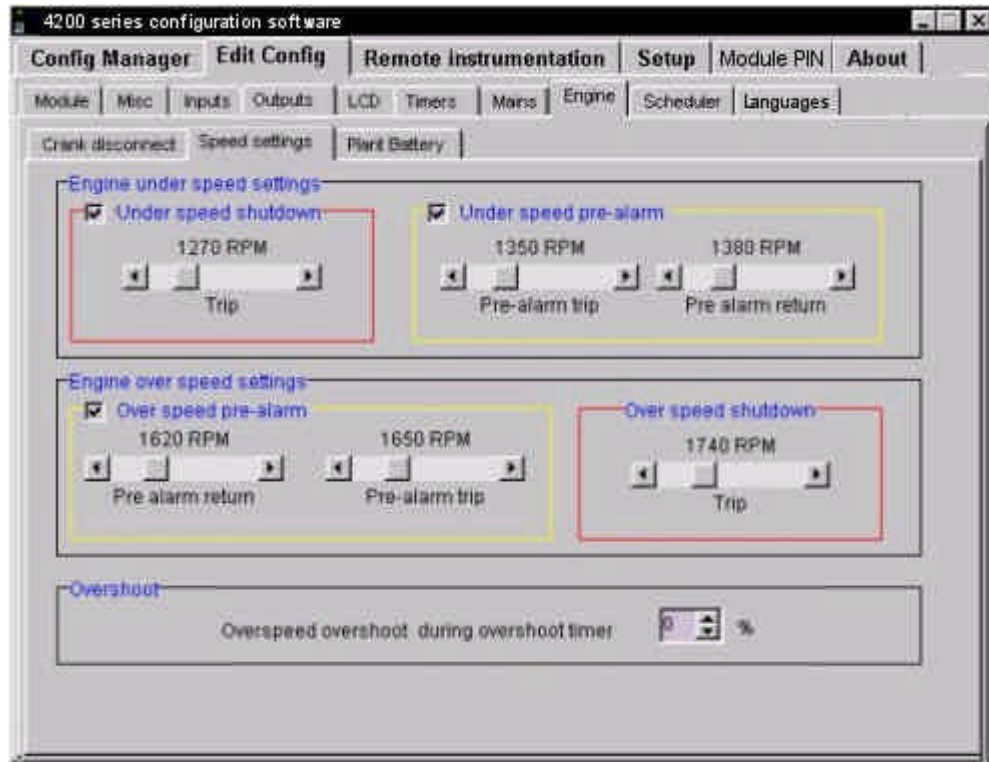


NOTE: The 4210/4220 module has two possible sources of crank disconnect namely engine speed and engine oil pressure. Either of these sources may be used individually, but it is also possible to use both. If this is the case, the source which reaches it's crank disconnect level first will cause the starter motor to disengage regardless of the state of the remaining monitored source. This feature allows for a much faster crank disconnect response leading to less wear on the engine and starter components, and provides added safety in case one source is lost.

Levels Description

Crank Disconnect	Function
Crank disconnect on engine speed	 J1939 The engine speed is read from the engine ECU using the J1939 CANbus interface. This level dictates the engine speed that has to be achieved before the starter motor will be instructed to disengage.
Crank disconnect on oil pressure	 J1939 The oil pressure is read from the engine ECU using the J1939 CANbus interface. ☐ = Engine oil pressure will NOT be used for crank disconnect. ☒ =Engine oil pressure WILL be used for crank disconnect in the event of the oil pressure exceeding the displayed '<i>crank disconnect on oil pressure</i>' value. The '<i>crank disconnect on oil pressure</i>' values can be adjusted to suit user requirements as detailed below. This level dictates the value that has to be reached by the engine oil pressure reading before the starter motor will be instructed to disengage. This setting can be used to obtain a crank disconnect much earlier than if alternator speed sensing is used, particularly if using alternators fitted with digital voltage regulators as these can take some time to produce an output. ! CAUTION! - If this feature is not to be used ensure that this setting is set to OFF to prevent premature crank disconnect. Check oil pressure prior to starting - If oil pressure is in required to be monitored to provide a crank disconnect and the feature is set to OFF; The software will query if oil pressure should be monitored as a indication of engine at rest: ☐ = Engine oil pressure will NOT be monitored to check if the engine is at rest. This would be used if an oil prime or pre-lubrication system is fitted, and would ensure that the engine would be allowed to start if oil prime was operating. ☒ =Engine oil pressure WILL be used to ensure that the engine is at rest. This is a back up to prevent the start motor from being engaged onto a running engine in the event of all other speed sensing forms being unavailable. ! CAUTION! - This is a safety feature and should only be set to OFF if it is strictly necessary to disable oil pressure monitoring at rest.

EDIT ENGINE SPEED TAB

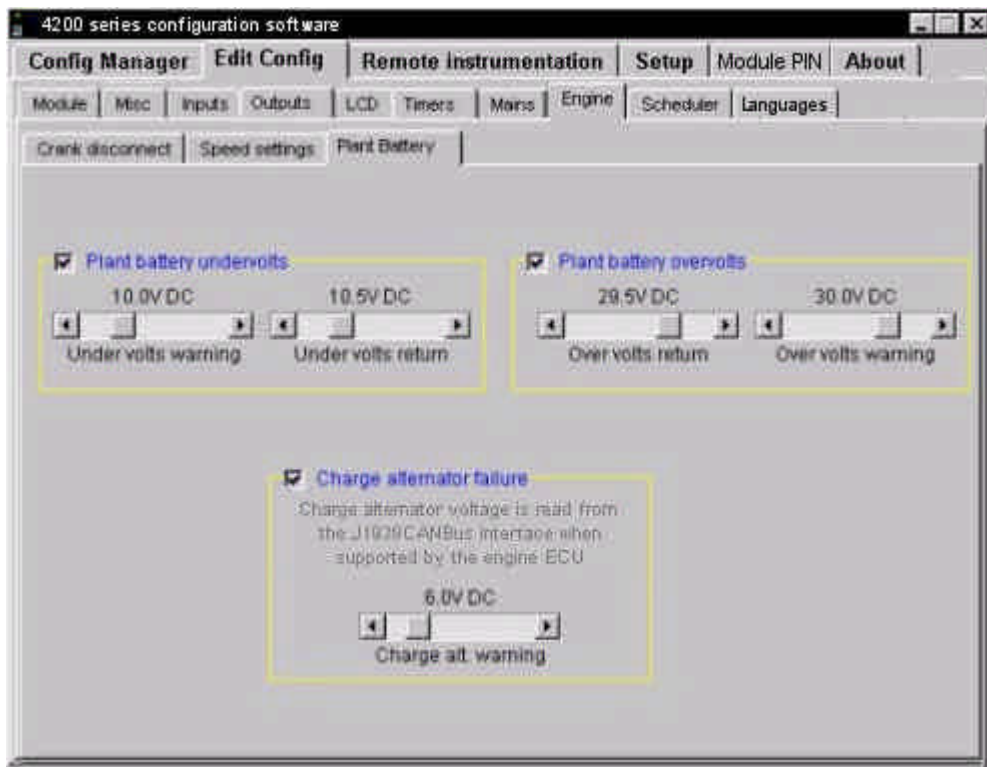


Levels Description

Speed Settings	Function
Generator Under Speed	1830 The engine speed is read from the engine ECU using the J1939 CANbus interface. These settings are used to configure the generator under speed alarm:- Shutdown - ☐ = Generator Under speed will NOT give a Shutdown alarm ☒ = Generator Under speed WILL give a shutdown alarm in the event of the generator speed falling below the displayed '<i>underspeed trip</i>' value. The '<i>underspeed trip</i>' value can be adjusted to suit user requirements. Pre-alarm - ☐ = Generator Under speed will NOT give a pre-alarm warning ☒ = Generator Under speed WILL give a pre-alarm warning in the event of the generator speed falling below the displayed '<i>under speed pre-alarm</i>' value. The '<i>under speed pre-alarm</i>' value can be adjusted to suit user requirements. The speed must return to above the '<i>Underspeed return</i>' setting before the 4210/4220 module will consider it back within limits.

Speed Settings	Function
Generator Over Speed	 J1939 The engine speed is read from the engine ECU using the J1939 CANbus interface. These settings are used to configure the generator over speed alarm:- Pre-alarm - ☐ = Generator Over speed will NOT give a pre-alarm warning ☒ = Generator Over speed WILL give a pre-alarm warning in the event of the generator speed rising above the displayed '<i>over speed pre-alarm</i>' value. The '<i>over speed pre-alarm</i>' value can be adjusted to suit user requirements. The speed must return to below the '<i>Over speed return</i>' setting before the 4210/4220 module will consider that it is back with in limits. Shutdown - This is the setting at which a Generator Over speed will give a shutdown alarm in the event of the generator speed rising above the displayed '<i>over speed trip</i>' value. The '<i>over speed trip</i>' value can be adjusted to suit user requirements.
Overshoot	 J1939 The engine speed is read from the engine ECU using the J1939 CANbus interface. Over-speed Overshoot during Overshoot timer- This value is used to prevent nuisance tripping on generators where a slow response governor allows the engine to overspeed slightly during start-up. This setting allows the normal overspeed shutdown level to be exceeded by a percentage (up to a maximum of 10%) for the duration of the overspeed overshoot timer. Should the engine speed exceed this temporarily elevated level it will be shutdown. Once the overspeed overshoot timer has expired, the overspeed shutdown value is restored to the normal level.  NOTE:- This is not a delay on overspeed shutdown, only a temporary raising of the overspeed value, therefore overspeed protection is not compromised.

EDIT ENGINE PLANT BATTERY TAB



Levels Description

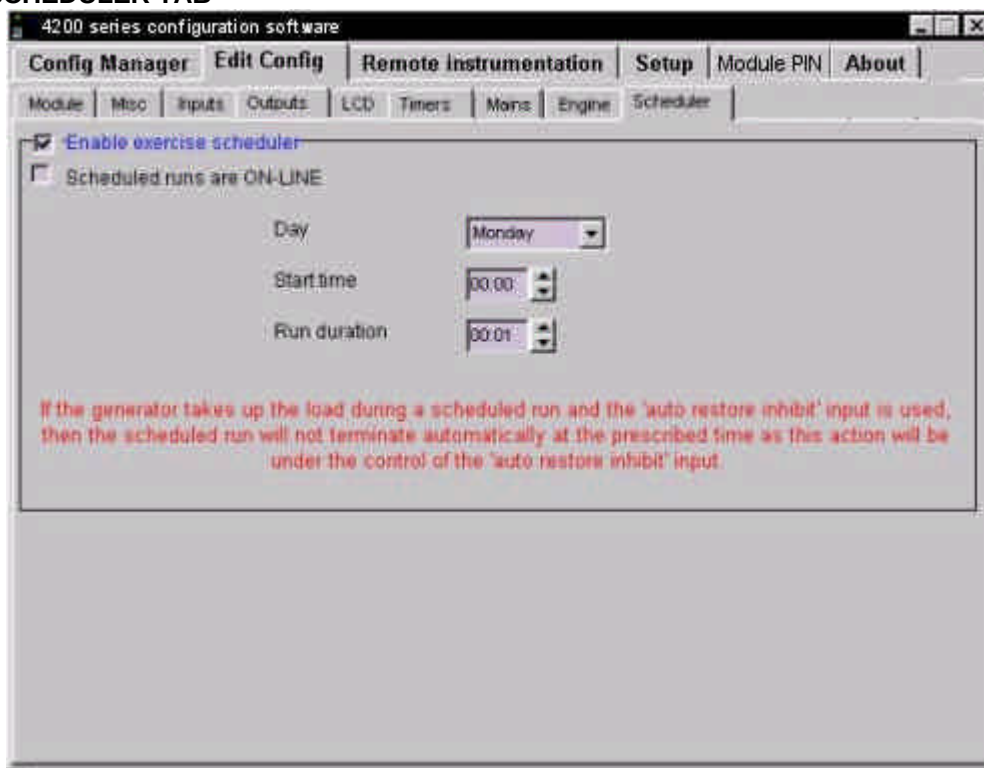
Plant Battery	Function
Plant Battery Undervolts	Plant Battery Undervolts - ☐ = Low Plant voltage trip will NOT give a warning alarm ☒ = Low Plant voltage WILL give a warning alarm in the event of the generator plant battery voltage falling below the displayed '<i>low voltage alarm</i>' value. The '<i>low voltage alarm</i>' value can be adjusted to suit user requirements. Should the input fall below this value the module will initiate the low voltage delay timer, if the voltage remains low and the timer expires, a low voltage warning will be given. The voltage must return to above the '<i>low voltage return</i>' setting before the 42xx module will consider that it is back within limits. (I.e. With an LV trip of 10.0V and an LV return of 12.0V, the plant voltage must return to 12.0V following a low voltage event to be considered within limits.)

Plant Battery	Function
Plant Battery Overvolts	Plant Battery Overvolts - ☐ = High Plant voltage trip will NOT give a warning alarm ☒ = High Plant voltage WILL give a warning alarm in the event of the generator plant battery voltage rising above the displayed '<i>High voltage alarm</i>' value. The '<i>high voltage alarm</i>' value can be adjusted to suit user requirements. Should the input rise above this value the module will initiate the high voltage delay timer, if the voltage remains high and the timer expires, a high voltage warning will be given. The voltage must return to below the '<i>high voltage return</i>' setting before the 42xx module will consider that it is back within limits. (i.e. With a HV trip of 27.0V and a HV return of 25.0V, the plant voltage must return to 25.0V following a high voltage event to be considered within limits.)
Charge Alternator Failure	Charge Alternator Failure - ☐ = Charge alternator low voltage will NOT give a warning alarm ☒ = Charge alternator low voltage WILL give a warning alarm in the event of the charge alternator voltage falling below the displayed '<i>Charge fail alarm</i>' value. The '<i>Charge Fail alarm</i>' value can be adjusted to suit user requirements.  J1939 The charge alternator voltage is read from the engine ECU using the J1939 CANbus interface. This is not available on all engine ECU's. As this is a true analogue value, total failure of the charge alternator is not the only failure that the module will provide protection for. Faults that cause the output voltage to fall, such as worn brushes etc., will cause the alarm to operate. The voltage must return to above the '<i>Charge Fail return</i>' setting before the 4210/4220 module will consider that it is back within limits.

3.1.8 EDIT SCHEDULER

This menu allows the scheduled run event to be configured. This event will automatically start and run the generator at a given time for a given duration. This function can be used to provide a regular generator exercise feature.

EDIT SCHEDULER TAB



NOTES

1. The 42xx Module will only respond to a scheduled run event if in the 'auto' mode. The engine will only be started if there are no shutdown alarms present.
2. Should the module not be able to run when a scheduled event is called, the event will not be cancelled but will remain active for the duration configured. Therefore should the module be restored to a condition where it can run, it will act in accordance with the scheduled run settings.
3. The 'Auto restore inhibit' input is not applicable to 42xx module.

Scheduler Settings Description

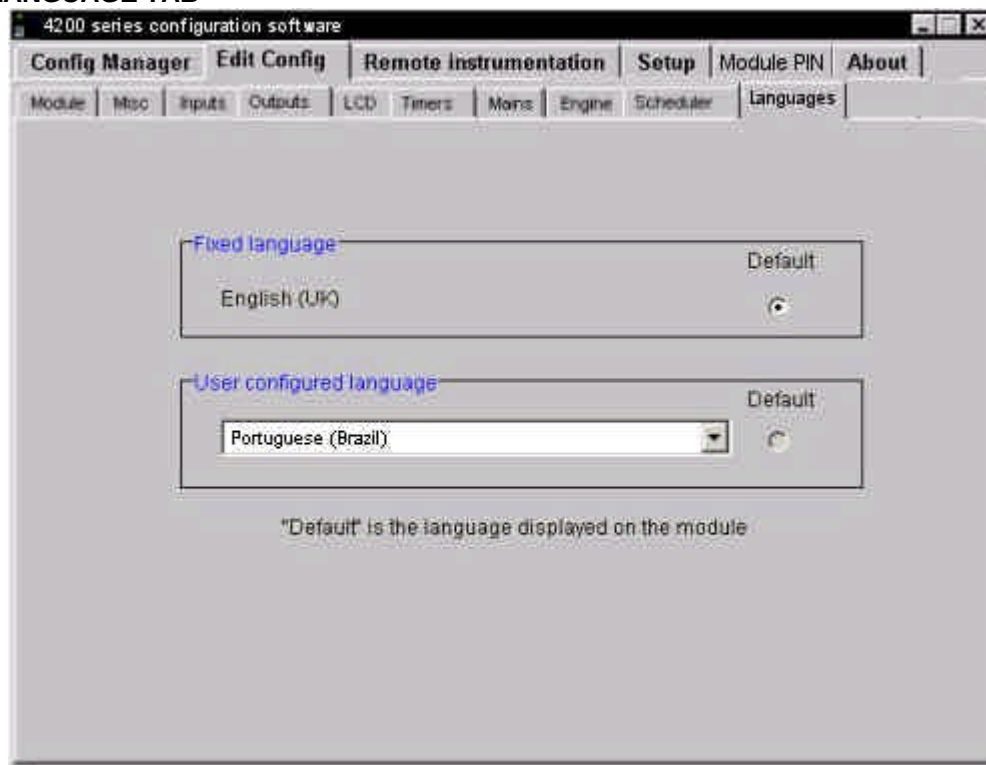
Sheduler Settings	Function
Enable Exercise Scheduler	Enable Exercise Scheduler - ☐ = The module will not respond to the scheduled run commands from the exercise scheduler. ☒ = The module will respond to the scheduled run commands from the exercise scheduler.
Scheduled Runs are On-load	Scheduled Runs are on-load - ☐ = In the case of a scheduled run command, the module will start the generator and run off-load for the duration of the scheduled run. E.g. To exercise a standby generator without interrupting the load. Should a remote start/mains failure occur during the off load run, the genset will take load as normal. ☒ = In the case of a schedule run command, the module will start the generator and the generator will take load for the duration of the scheduled run. E.g. For a timed peak lopping application.
Exercise Scheduler	Exercise Scheduler - Day - <i>Day of the week that the event will occur.</i> Start - <i>The Time of Day that the scheduled run command will be issued.</i> Run Time - <i>The duration that the scheduled run command will be present for, therefore the amount of time the generator will run for.</i>

! CAUTION!:- Should the generator take load during a scheduled run, either because the run was configured to be 'on load', or a remote start/mains failure occurred during the run; if the 'Auto restore inhibit' input is active the genset will not stop at the end of the scheduled run, until the 'Auto restore inhibit' input becomes inactive.

3.1.9 EDIT LANGUAGES

This menu allows the modules configurable language to be adjusted. The module has one fixed language (British English) and one user selectable language.

EDIT LANGUAGE TAB



4 SCADA MENU

4.1 DIAGNOSTICS

A particularly useful feature of the module is its ability to provide real-time diagnostic information to the PC. This can be used to give on-screen details of the operation of the module and generating set performance.

A number of different diagnostic displays are available:-

The first display is Mimic Display. This provides at-a-glance monitoring of the system. All non-essential information is hidden. Clear graphical displays allow easy control and performance monitoring. Should an alarm occur this is clearly displayed by an 'Alarm' legend. This page provides the normal operator control interface for remote operation (if enabled)

The second display is the Alarm Display this allows the user to see details on any alarm conditions that are currently active. The module internal firmware revision details are also given; this is to aid DEEP SEA ELECTRONICS technical staff in the event of a query.

The third display is the Status Display this allows the user to see at a glance the values of all measured inputs and the status of any of the digital inputs. The state of the output relays and LED's are also displayed. As the displays are real-time the opening and closing of the inputs and outputs can be viewed this can assist in system performance monitoring and fault finding.

The Fourth display is the Engine Display this allows the user to see at a glance most of the measured values to allow monitoring of the Engine performance. When connected to a 4220 module, this page will also display the state and levels of the Mains (utility) supply.

 **NOTE:- Mains supply monitoring is only available on 4220 module.**

4.1.1 COMMUNICATIONS STATE INDICATION

Comms:- A small icon in the bottom left of the screen indicates that the link to the module is healthy.

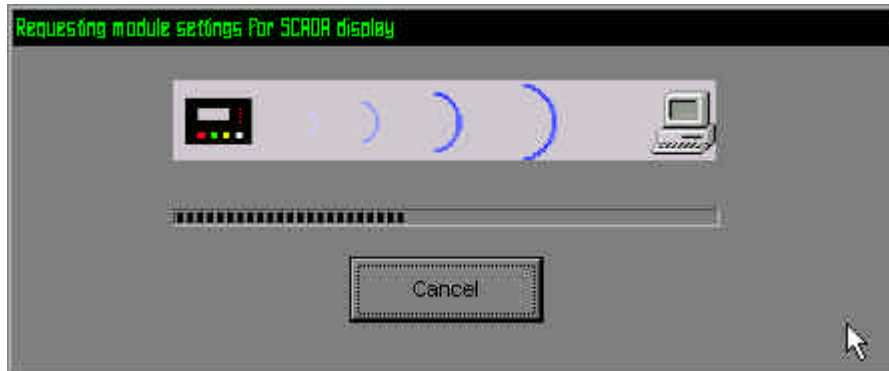
	Communication Link is OK when 'beating Heart' is displayed.
	Communication Link is OK when 'beating Heart' is displayed.
	Communication Link is not functioning, no data is being received. Check 'Set-up' and ensure module is connected.

Module Type:- A small icon in the bottom left of the screen indicates the type of module and any options fitted.

	Module type unknown (prior to comms link being made or when link is lost)
4210	Currently connected module is 4210 Automatic Start Module
4220	Currently connected module is 4220 Automatic Mains Failure Module
 J1939	Currently connected module has CANbus J1939 option fitted. (All 42xx controllers have this facility.)
	No valid PIN has been entered for the currently connected module. Read only access – Operator can view module parameters but can not change operating mode or reset alarms,etc.
	Valid PIN entered, full read/write access – Operator can view module parameters and control the module, resetting alarms etc.

4.1.2 REQUESTING MODULE SETTINGS FOR SCADA DISPLAY (IF ENABLED)

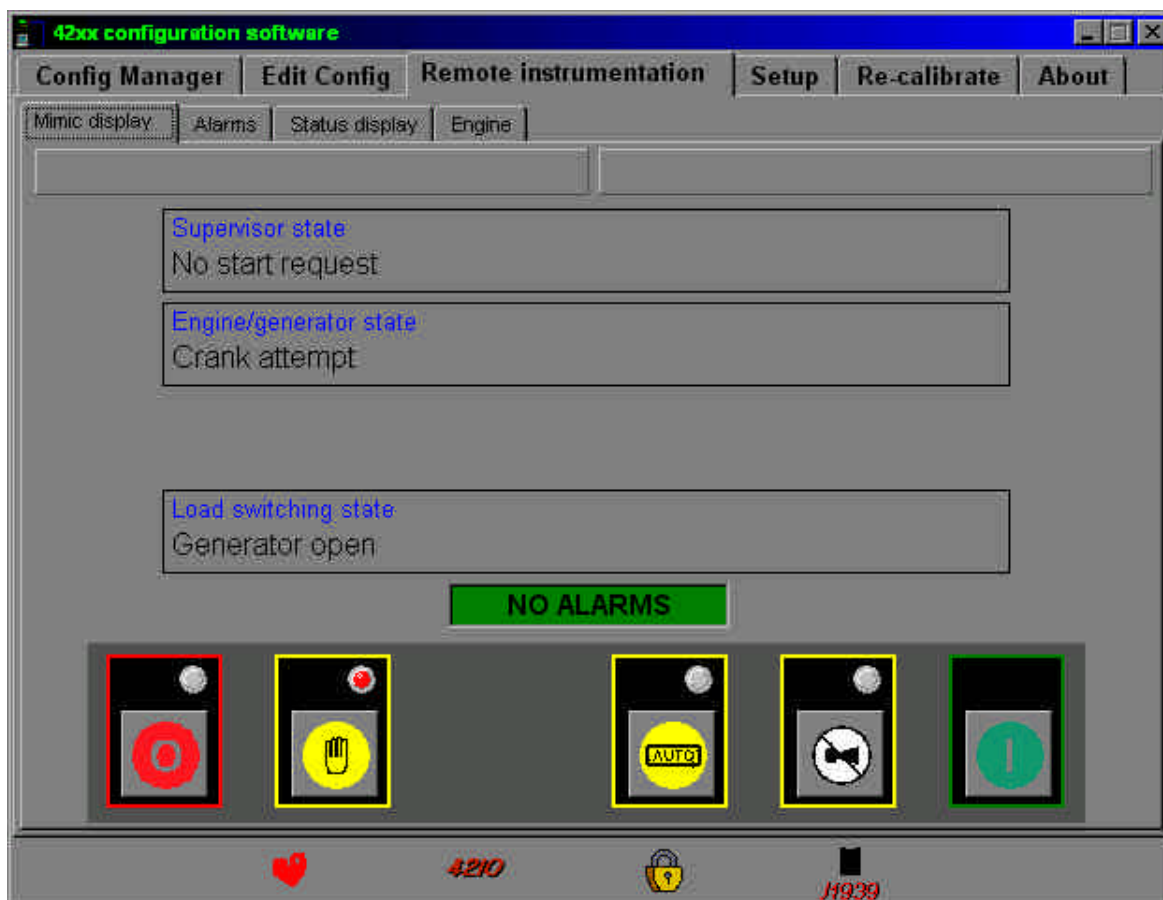
Once connected the 42xx series software will ask the module to send details of its internal configuration. This is then used by the SCADA display to provide more detailed information about the operation of the module and the remote site. While this information is being received the following screen will be displayed:-



NOTE:- The additional information is used to identify the function of inputs, outputs and LED's etc. If this extra detail is not required then the cancel button can be pressed to stop the transfer. This facility can be disabled in 'Setup this software' if it is not required.

5 MIMIC TAB

If the Mimic Display option is selected the display will show:

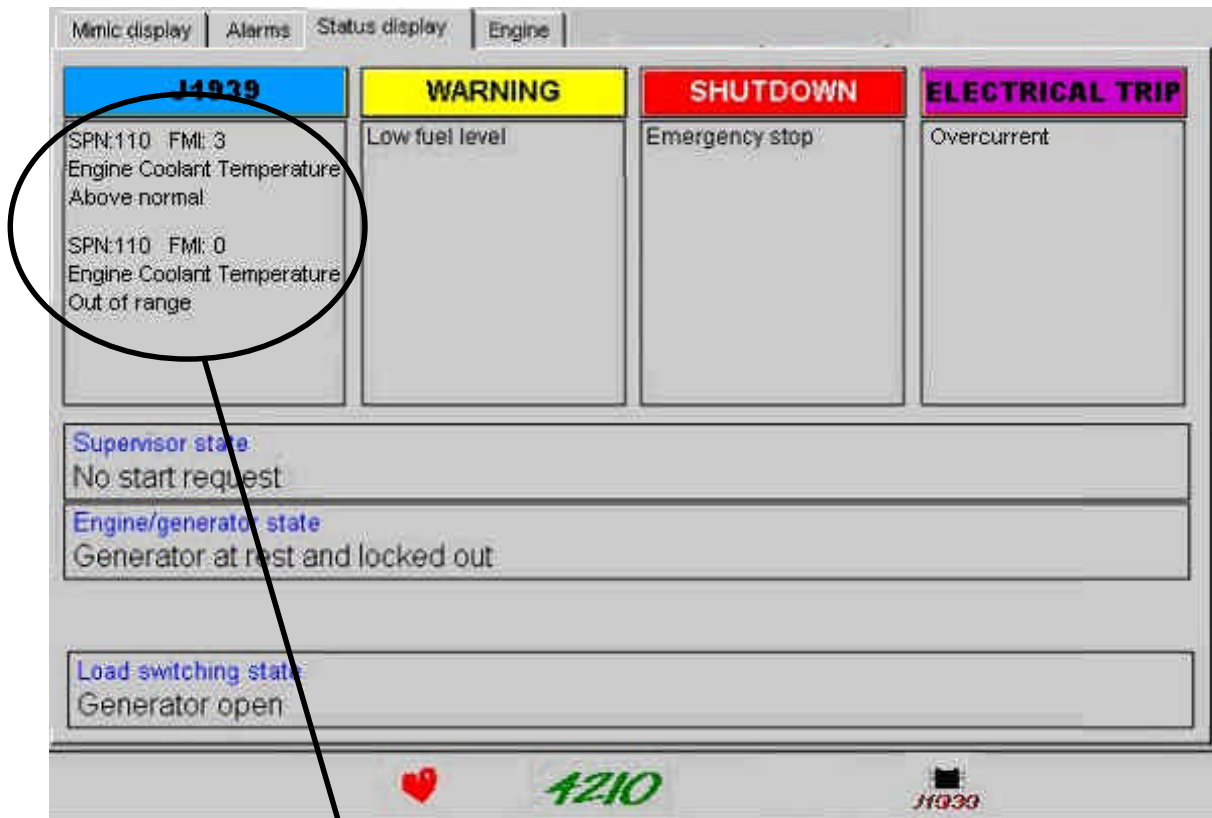


NOTE:- Using the Mouse to 'click' on the buttons will allow the module to be operated from the PC screen. This function can be used to provide remote control of the 42xx module via the 810 interface. The 810 interface cable can be extended up to 100 meters (from the module to the 810).

The remote control facility can be disabled from the 'Setup' tab if remote monitoring only is required.

5.1.1 ALARM STATUS TAB

If the Status Display option is selected the display will show:



 **J1939** ECU error messages (when available) are displayed on the alarms page as shown above.

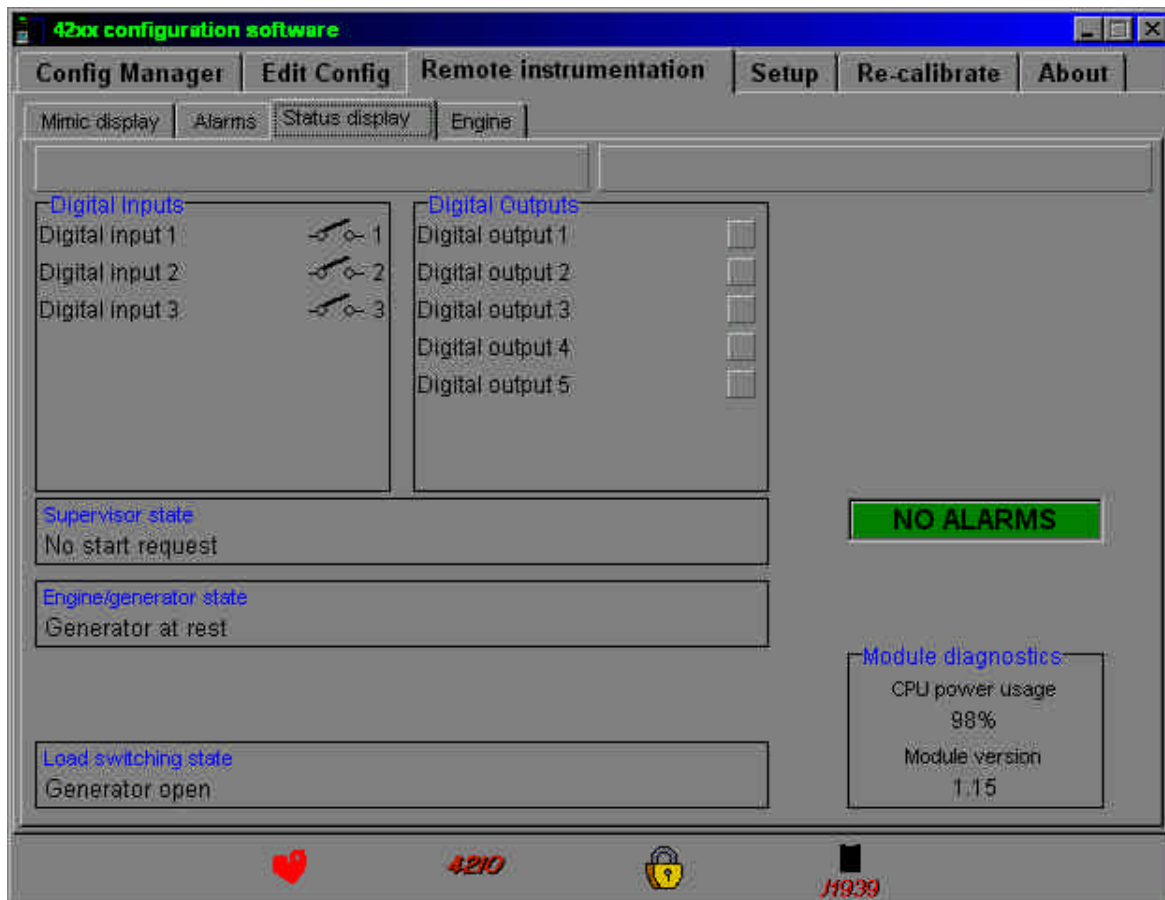
Examples of SPN / FMI numbers, taken from the Volvo Penta TAD12 manual are :

SPN 110 – Engine coolant temperature
 FMI 0 – Error (ie faulty sender)
 FMI 3 – High
 FMI 4 – Low

 **NOTE:-** 'Hovering' the mouse cursor over the SPN/FMI numbers will display the J1939 messages where appropriate.
 For further details on these code meanings, refer to the ECU instructions provided by the engine manufacturer.

5.1.2 STATUS DISPLAY TAB

If the Status Display option is selected the display will show:



5.1.3 ENGINE INSTRUMENTATION TAB

(4210 module only)

When a 4220 module is connected, this tab is replaced by the Engine / Mains tab (see below)

If the Engine Instruments Display option is selected the display will show:



5.1.4 ENGINE / MAINS INSTRUMENTATION TAB

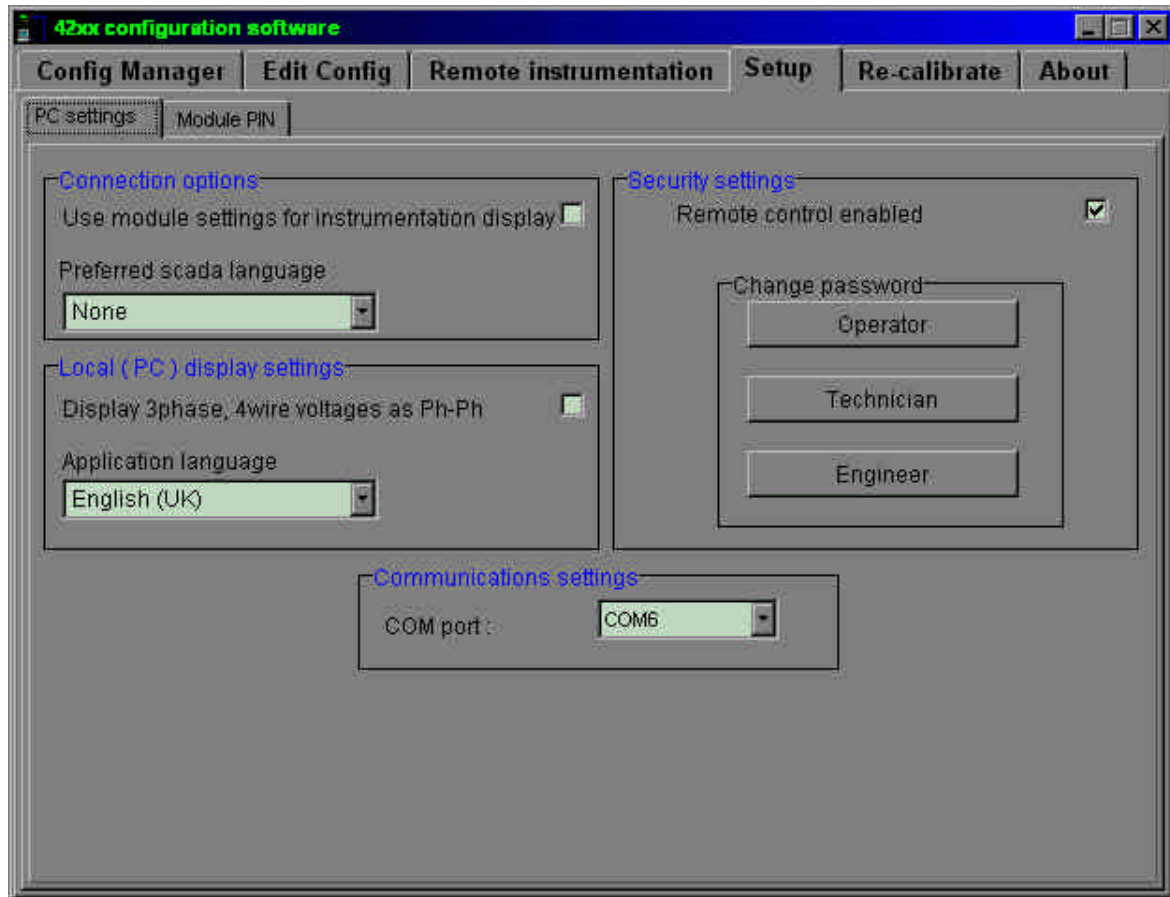
(4220 module only)



6 SETUP MENU OPTIONS

6.1 SETUP

This menu is used to access the software configuration file, to customise the way the software operates with the PC system. When selected the following is displayed:



Setup This Software	Function
Connection Options	Use module settings for instrumentation display - ☐ = Basic generic instrumentation display is used. ☒ = When connection is made the module will transmit its current settings for use by the instrumentation display. The instrumentation display can then correctly identify the functions of user configured inputs and outputs etc.
Local (PC) display settings	These options are used to set up certain display features affecting the way the 42xx series software displays information to the user. Display 3ph 4wire mains voltage settings as ph-ph (only applicable when editing a 4220 AMF configuration). ☐ = On Edit Mains voltage tab the voltage settings are all referred to as Phase to Neutral values if the module is set for three phase four wire. ☒ = On the Edit mains voltage tab the voltage settings are all referred to as Phase to Phase if the module is set for three phase four wire.
Security Settings	These options are used to set up certain security features, which will affect users with lower level passwords. Remote Control Enabled- ☐ = If the remote control facility is disabled then the facility is removed from the 'Mimic' diagnostic instrumentation display in all password levels. ☒ = If the remote control facility is enabled then a set of control buttons will be displayed in the 'Mimic' diagnostic instrumentation display in all password levels. If these are operated, <i>(by using the mouse and clicking on them)</i> then the appropriate command is sent via the P810 interface to the 42xx module.
Communications Settings	Communications settings configure how the software is to communicate with the module. Change COM Port (COM2) - This menu option is used to configure the software to use the appropriate COM port on the PC. The COM ports are the RS232/RS485 interface terminals normally located on the rear of the PC, the module configuration software can use any one of these ports. A check should be made to ensure that the ports are not already in use by other sources such as mouse drivers or modems. Normally COM2 is the spare port with COM1 being used by a mouse. This can vary from PC to PC, so it is recommended that you check your configuration by referring to the documentation supplied with your PC or by contacting your PC support personnel. Should you still experience problems contact DEEP SEA ELECTRONICS for assistance. When using the USB version of P810 interface the USB driver will create a 'virtual COM port' (i.e. COM6). This must be selected in the setup tab for the P810 USB to operate. The 'virtual COM port' may only be visible when the P810 USB is connected to the PC.  NOTE:- A quick check of correct communication with the module can be made by selecting the SCADA diagnostics mode, if no 'Heartbeat' is displayed this indicates that a communications link has not been established. Check the COM port setting as described above.

6.1.1 CHANGE PASSWORDS

NOTE:- These passwords are only to give access to the software for configuring the module, not for access to the module itself. The default passwords are blank and when a password is requested press the ENTER button.

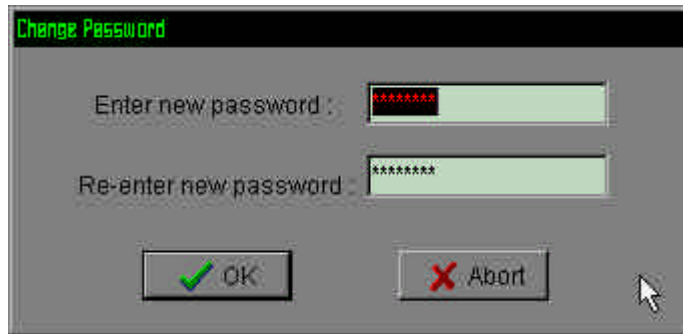
OPERATOR PASSWORD

This option is used to change the operator level password used to access the software. In operator only limited changes can be made to the module configuration (Timer settings only), existing config files cannot be overwritten only new ones created.

The operator level password can only be changed if the Engineering level password is known; this is to prevent unauthorised password changes being made.

NOTE:- The passwords are only to give access to the software for configuring the module, not for access to the module itself.

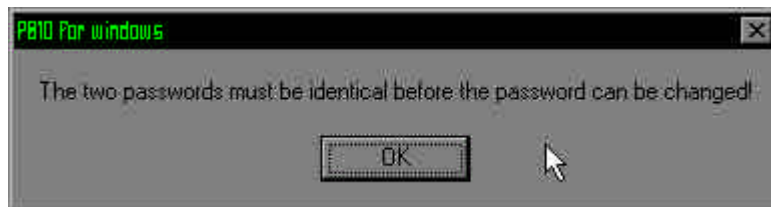
When the option is selected the following will be displayed:



Type in the NEW password, this password is limited to 20 characters maximum, any combination of numbers and letters can be used. The software IS case sensitive.

Re-enter the NEW password, press the 'OK' button.

The passwords will be verified and if they do not match the screen will display:

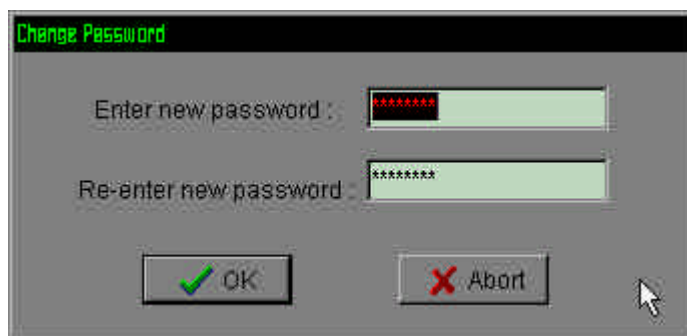


ENGINEERING PASSWORD

This option is used to change the engineering level password used to access the PC software

If the software is accessed using the engineering password, all values are available for modification including the complete module.

When the option is selected the following will be displayed:



Type in the NEW password, this password is limited to 20 characters maximum, any combination of numbers and letters can be used. The software IS case sensitive.

Re-enter the NEW password, press the 'OK' button.

The passwords will be verified and if they do not match the screen will display:

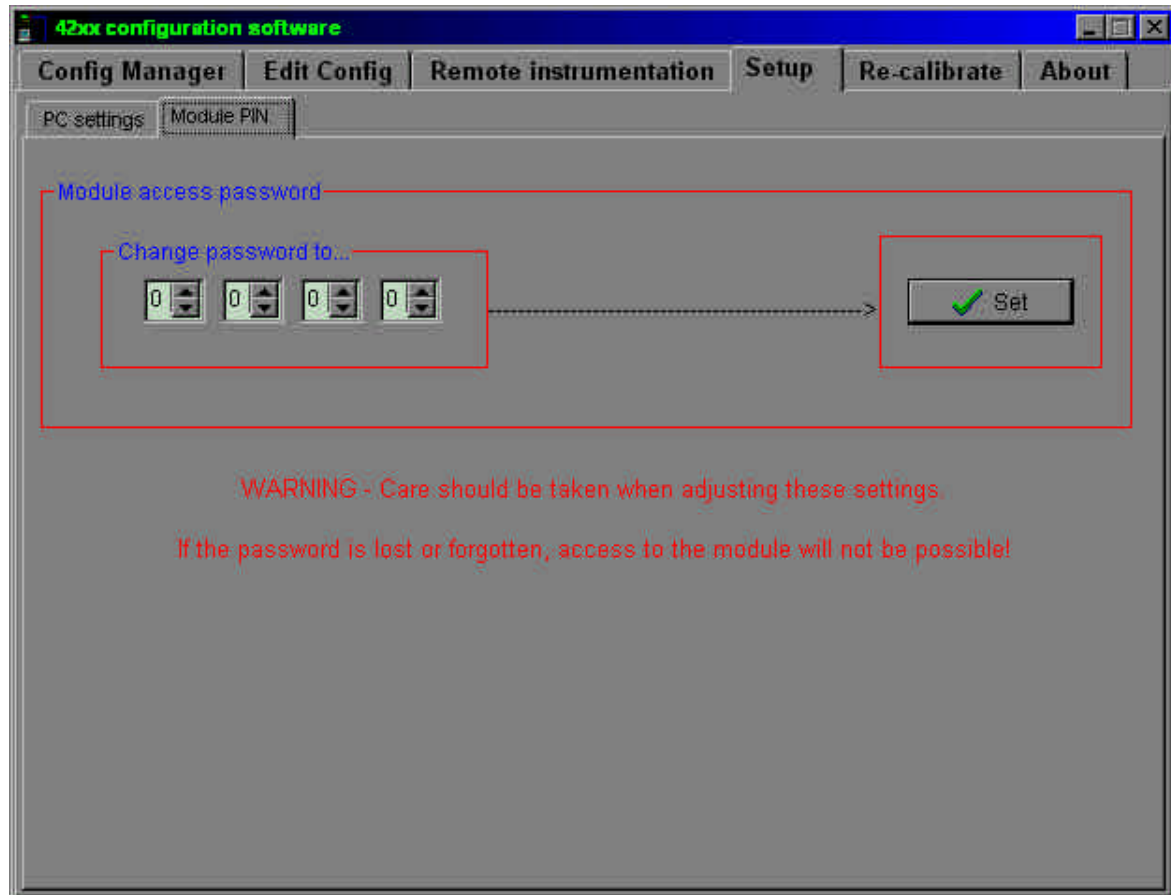


NOTE:- A forth password level exists for use where the module is being used to provide a remote monitoring display on a PC. If the password 'MIMIC' is entered on start-up the software will enter the diagnostic Mimic display. No changes to any of the module settings or software configuration can be made without the correct operator or engineering password being entered. Refer to the 'Instrumentation' section of this manual.

6.2 MODULE PIN

Permission to adjust the module's configuration settings is controlled by module PIN number. This is a four digit numeric code to protect both writing of a configuration file using the PC software, and access to the configuration using the front panel editor.

! CAUTION!:- Ensure that you make a note of the PIN number when you allocate it to a module. Without the correct PIN number, it will be impossible to gain configuration access to the module. If the PIN number is lost the module will need to be return to DSE to be reinitialised – All module setting will be lost in this operation.



Enter the required security PIN number and click the SET button. The controller must be correctly connected to a DC Supply and to the PC via the P810 interface lead.

- ! NOTE:-** Care should be taken when setting the PIN number. If the number is lost or forgotten, access to the module will not be possible!
- ! NOTE:-** To disable the PIN number enter '0 0 0 0'. When the PIN is set to '0 0 0 0', no request for PIN will be made by the controller or the configuration software.
- ! NOTE:-** To change an existing PIN number, enter the new PIN number and click SET. If a PIN is already set in the module, this will be asked for before changing.
- ! NOTE:-** Once the PIN has been entered correctly, the configuration software will 'remember' your selection for the duration of the session. If the PC software is closed down, the PIN number selection is 'forgotten' and must be re-entered in order to gain access to the module again.