



DEEP SEA ELECTRONICS PLC

51xx series configuration software for Windows™

Software Manual

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1 DESCRIPTION

The DSE **51xx series** configuration software allows the 51xx 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 (diagnostic monitoring not applicable to the 51xx modules).

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 USB interface is housed in a robust plastic case. Connection to the module is via an FCC 68 RJ45 'CAT5E Network' type cable ('straight-through' type), this allows for easy replacement in the field should the connecting lead be damaged or lost. For legacy support an RS232 version is also available with an adapter cable to allow connection to the 9 pin D type RS232 connectors as required.

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.
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1.2 MANUAL STRUCTURE

This manual is designed to assist users of the 51xx series configuration software; this is the common configuration software for all modules of the 51xx 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 51xx module such as Mains failure detect setting (5120 AMF Modules only). A separate manual deals with the operation of the individual modules..

2 PC INTERFACE MODULE 810

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

- **810** (USB) Interface Module or **810** (RS232) Interface Module
- USB cable, (25 to 9 way adapter supplied with the RS232 version).
- FCC 68 (8 Pin) Connecting Lead
- 1x CD with configuration software

2.1 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 for software installation (see note below)
Communications	A USB port or an RS232 comms port is needed to communicate with the 810 interface and 5xxx configuration software (see note below)

Installing '51xx series configuration software For Windows™' program From Software CD

NOTE: - As 51xx 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 software CD.

NOTE: - The USB version of the P810 interface is 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, installation instructions are available on the Deep Sea Electronics web site at www.deepseapl.com. The driver will install a 'virtual COM port' for the USB P810 – this should be selected as the COM port in the 'set-up' tab. An RS232 version is also available.

NOTE: - Please register your software online at www.deepseapl.com – Once registered you will be notified of any updates to the software to ensure that you always have access to the latest features.

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

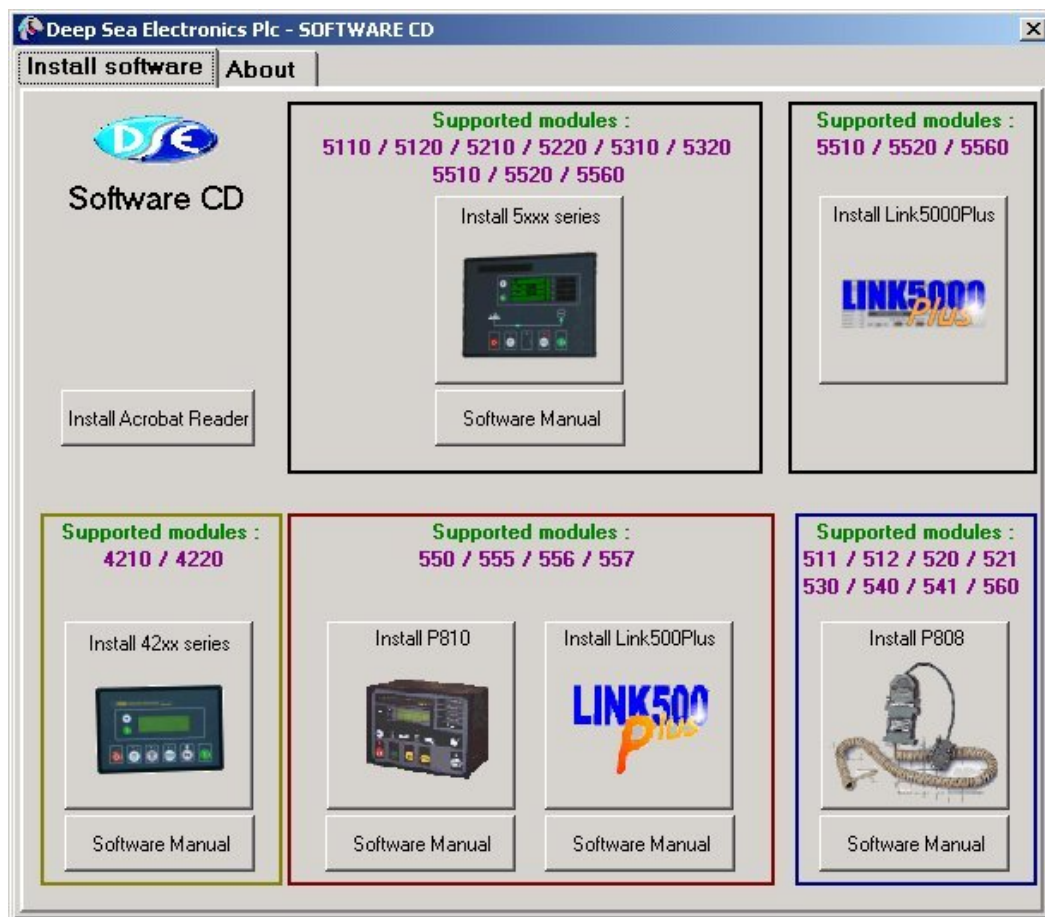
Double click on **My Computer**:



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



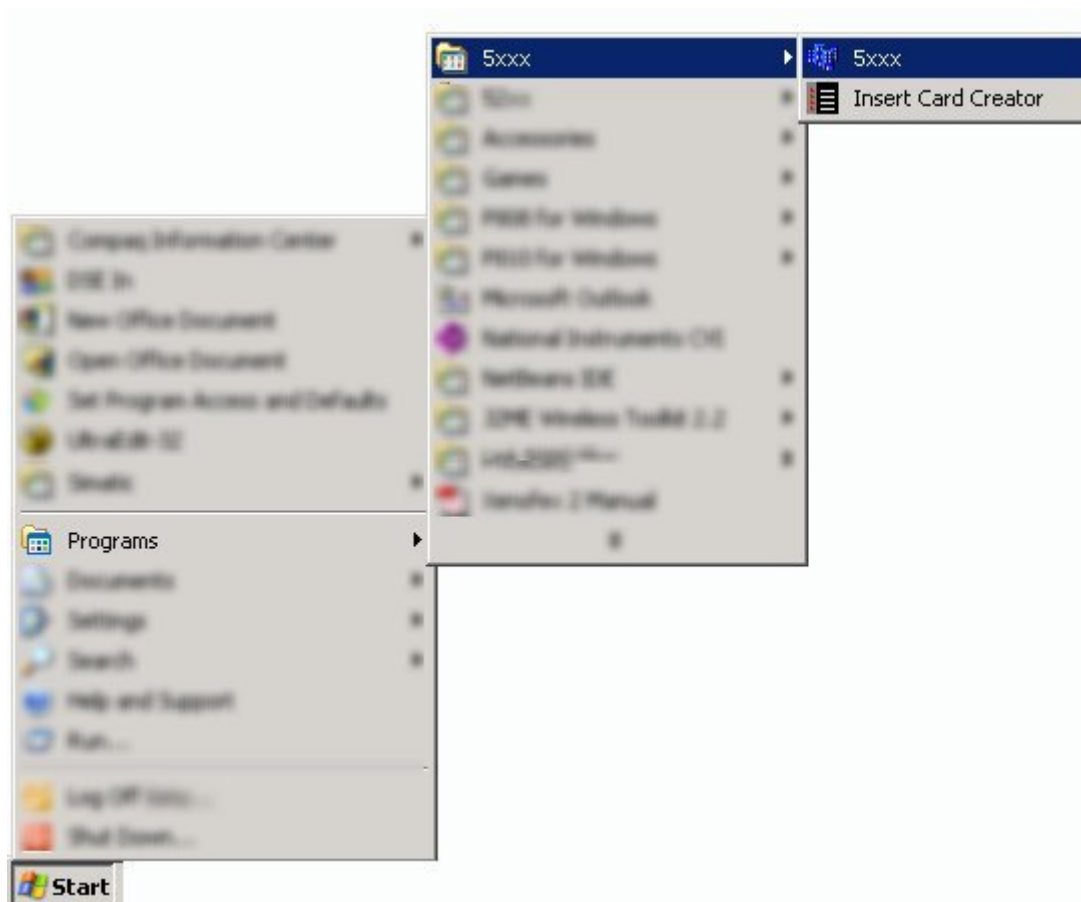
Click on the 'Install 5xxx series' button to install the software onto your PC in its own folder (directory). It will also create 'START MENU' items.

To run 5xxx series configuration software For Windows program

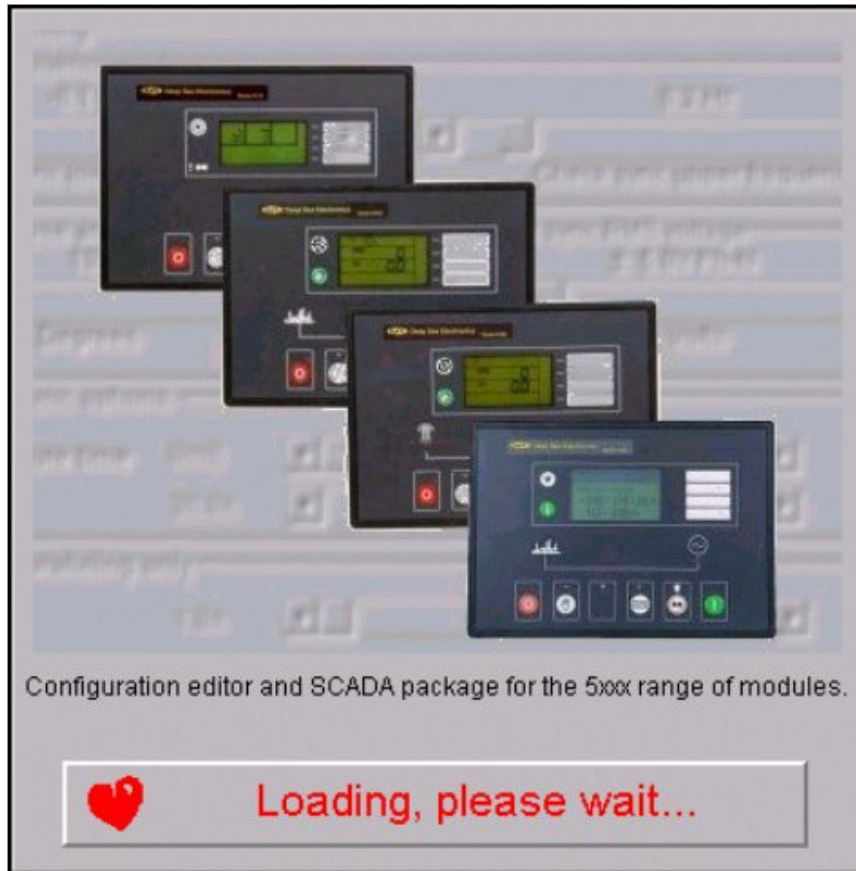
Press the:



And then select 'Programs' - '5xxx' as shown below: -



The screen will then display: -



The module type selector will appear after a short delay



Click on the 51xx button and the PC will then load P51xx for Windows.

The password page will appear after a short delay.



The software provides two 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 is the Engineer level, if this password is entered all of the module functions can be configured. Password for all levels can also be changed with this level.

It is intended that the 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.

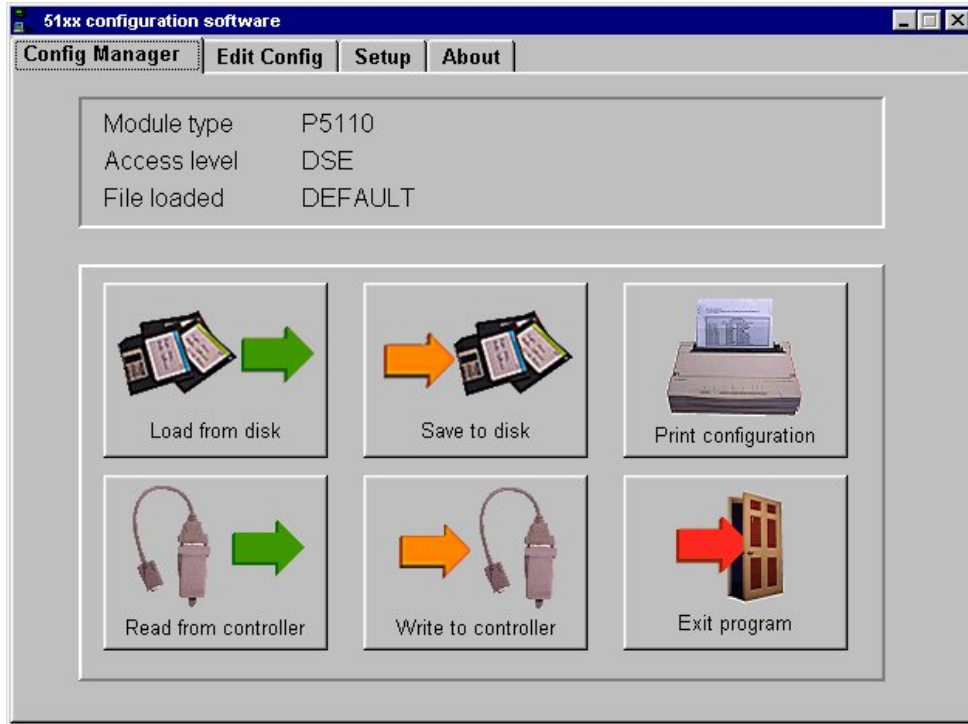
Users without a password will not be able to gain access to the software at all.

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.

3 CONFIG MANAGER

Once loaded the '**Main**' Menu is displayed



Module Type: - This indicates the type of module for which the 51xx 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 under the 'Misc' tab in the 'Edit Config' 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 51xx series software, the '*DEFAULT*' configuration is loaded at start up, 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 51xx 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 printout 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 51xx 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.

If a module security PIN number has been set, this will be asked for and must be correctly entered before the configuration file will be sent to the controller.

Should the module not be ready to receive data i.e. generator not at rest and in stop mode, the software senses that the engine is running and a warning message 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 51xx 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.

 **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 5110 configuration to a 5120 module. However, it is possible to base a new config on an existing config and change the options to suit the new module.

 **NOTE:** - The correct module version must be selected in order to write to the controller. I.e. you can only send version 2 configuration files to version 2 modules.

4 EDIT CONFIG

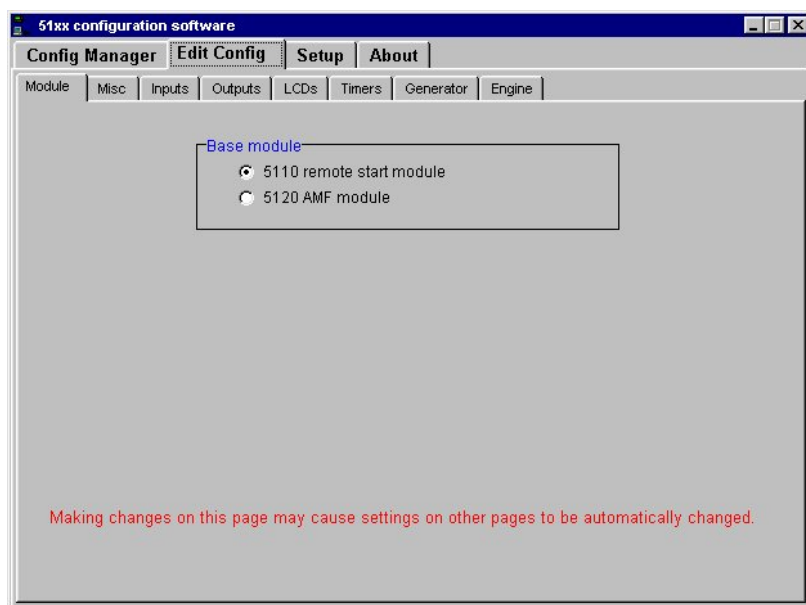
This menu allows the module configuration to be changed, such that the function of Inputs, Outputs and LED's can be altered. System timers and level settings can also be adjusted to suit a particular application.

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

4.1 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: -

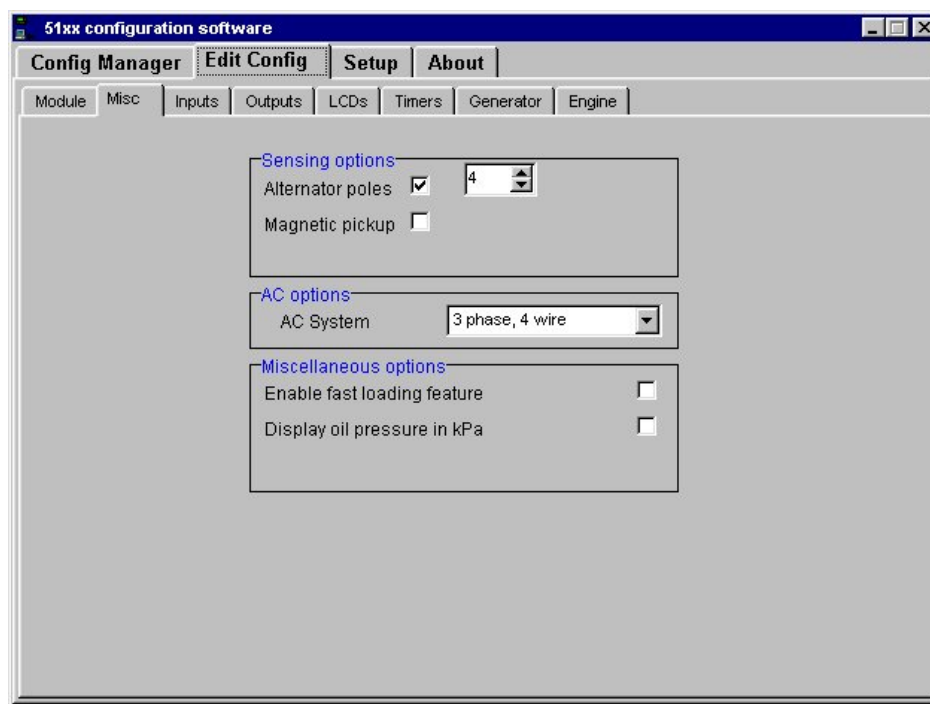
It will not be possible to send a configuration for the wrong module type to a different module. E.g. You cannot send a 5110 configuration to a 5210 module. However, it is possible to base a new config on an existing config and change the options to suit the new module.

MODULE DESCRIPTION

Item	Function
Base Module	These settings are used to select the base module on which the configuration is based. Module Type - ☒ = 5110 Remote Start Module ☐ = 5120 Automatic mains failure module This setting determines whether the configuration file is for a 5110 or a 5120 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.

4.2 MISC

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:



NOTES: - It is possible to configure the 51xx modules to use either alternator frequency or magnetic pickup speed sensing, both or none. If both sources are used shutdown will occur if either speed-sensing source gives an over or under-speed (frequency) signal.

If a magnetic pickup is not to be used it is important that “magnetic pickup ☐” is unchecked. If the module expects to receive magnetic pickup pulses and none are apparent on starting, it assumes that the pickup is faulty and will shutdown the engine.

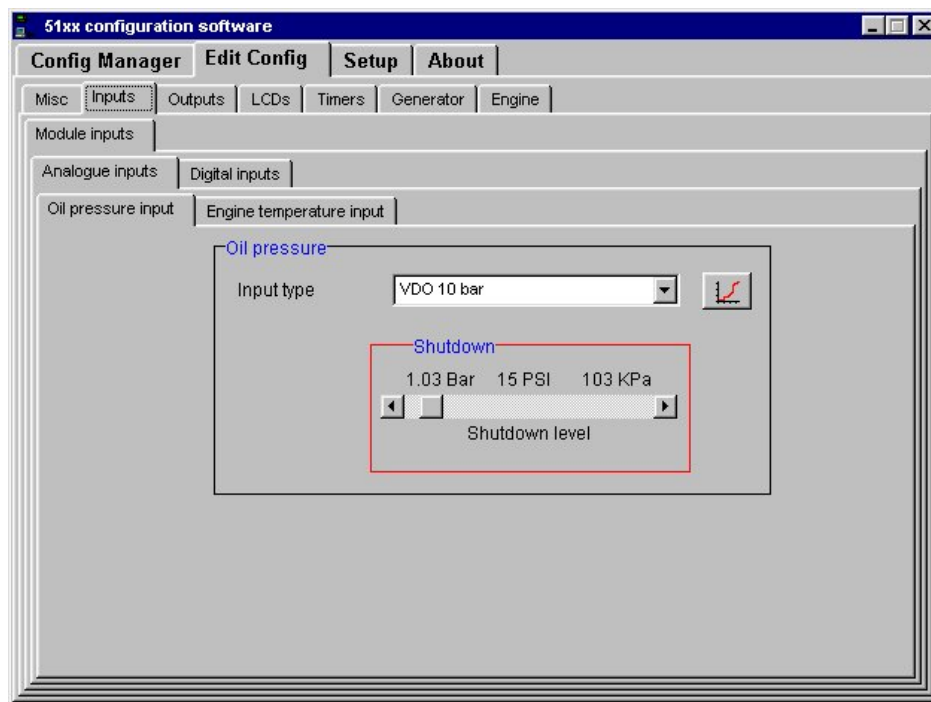
Item	Function
Speed sensing options	These settings are used to select which method of speed sensing is used: - Generator Frequency - ☐ = Speed sensing will not be derived from generator output frequency. ☒ = Speed sensing will be derived from the generator output frequency The number of alternator poles then needs to be set to allow the module to determine the engine speed. Magnetic Pick-up - ☐ = Speed sensing will not be derived from the magnetic pickup. ☒ = Speed sensing will be derived from the magnetic pickup The number of flywheel teeth on the engine then needs to be set.  NOTE: - Selecting either of the above will enable or disable relevant selections throughout the remainder of the configuration.
AC Options	These settings are used to detail the type of AC system to which the module is connected: - AC system – 3 phase 4 wire – $(L1 + L2 + L3 + N)$ 1 phase 2 wire – $(L + N)$ 3 phase 3 wire – $(L1 + L2 + L3)$ 2 phase 3 wire – $(L1 + L2 + N)$
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 engines where premature 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. I.e. When fitted with engine heaters, electronic governors etc. Display Oil Pressure in KPa – ☐ = Oil pressure is displayed in both PSI and BAR format on the LCD display. ☒ = Oil Pressure is displayed in KPa format only.

4.3 INPUTS

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

ANALOGUE INPUTS

OIL PRESSURE INPUT



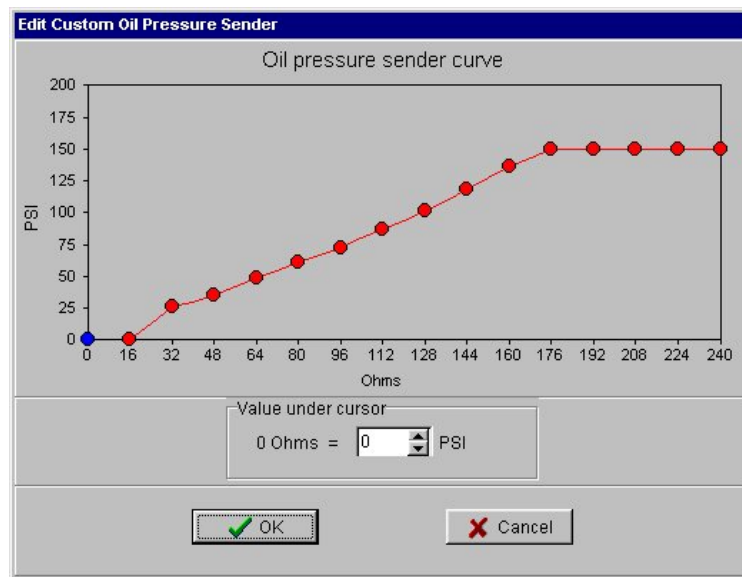
Custom curve editor



To enter the curve editor select the icon

This allows senders to be used which have not been pre-configured in the 5xxx software. Each sender curve has 16 points which map the relationship between sender resistance and reading.

Once the curve direction is started the curve must continue to follow the set direction – i.e. If resistance increases with rising oil pressure then each point on the graph must follow this. So each point must show a higher value than the one previous. If any two points on the graph are equal or reverse the initial direction the module will consider this the end of the curve and show 'over-range' for values which are past this point.

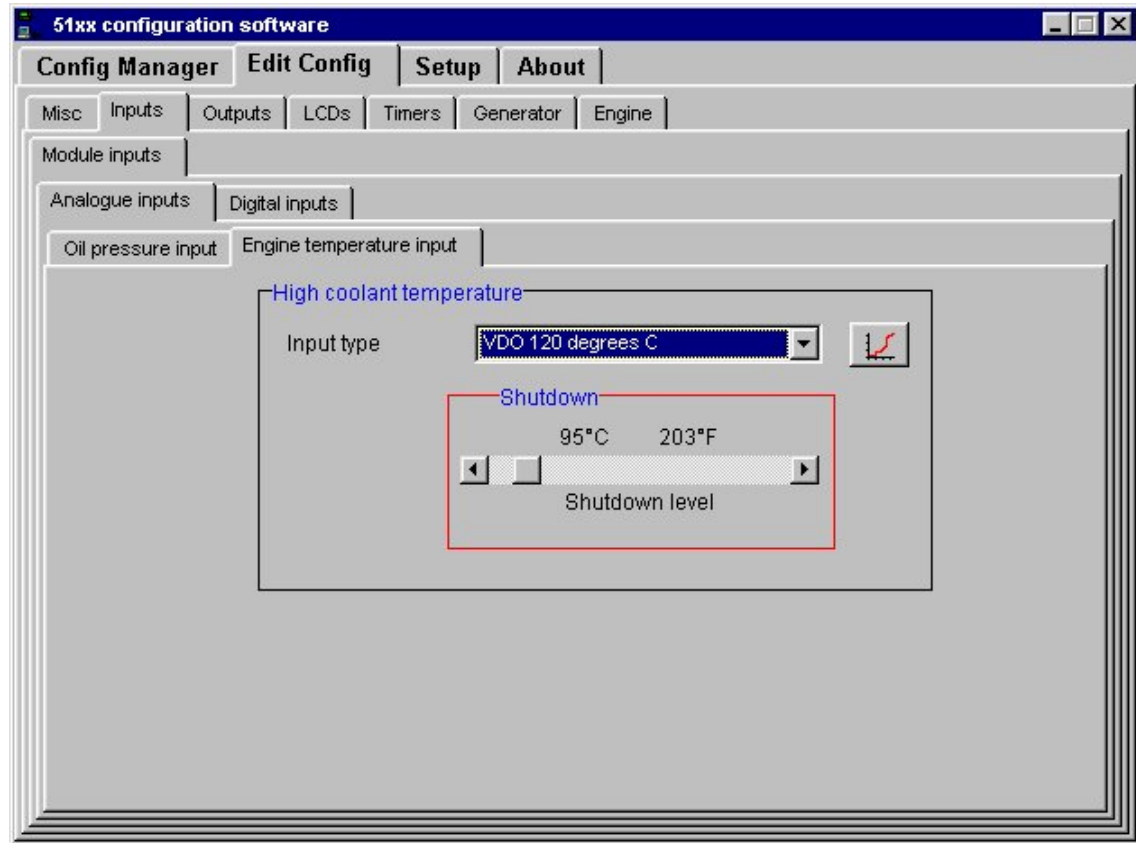


Function	Description
Oil Pressure settings	This section is used to configure the Oil Pressure sender input. Input Type: - <i>Not Used</i> - The Oil pressure input will not be monitored. <i>Digital - closed for low oil pressure</i> - The Oil Pressure input is fed from an engine mounted digital pressure switch. This switch returns a closed signal during low oil pressure conditions (and engine at rest), once oil pressure is established the switch will open. <i>Digital - open for low oil pressure</i> - The Oil Pressure input is fed from an engine mounted digital pressure switch. This switch returns an open signal during low oil pressure conditions (and engine at rest), once oil pressure is established the switch will close. <i>VDO match, 0-5bar</i> - The Oil Pressure input is connected to a resistive type engine mounted oil pressure transducer. The output of this transducer matches that of a VDO type sender with an operating range of 0-5bar. <i>VDO match, 0-10bar*</i> - The Oil Pressure input is connected to a resistive type engine mounted oil pressure transducer. The output of this transducer matches that of a VDO type sender with an operating range of 0-10bar. <i>Datcon match, 0-5bar</i> - The Oil Pressure input is connected to a resistive type engine mounted oil pressure transducer. The output of this transducer matches that of a Datcon type sender with an operating range of 0-5bar. <i>Datcon match, 0-10bar</i> - The Oil Pressure input is connected to a resistive type engine mounted oil pressure transducer. The output of this transducer matches that of a Datcon type sender with an operating range of 0-10bar. <i>Datcon match, 0-7bar</i> - The Oil Pressure input is connected to a resistive type engine mounted oil pressure transducer. The output of this transducer matches that of a Datcon type sender with an operating range of 0-7bar. <i>Murphy, 0-7bar</i> - The Oil Pressure input is connected to a resistive type engine mounted oil pressure transducer. The output of this transducer matches that of a Murphy type sender with an operating range of 0-7bar. <i>User Configured</i> - The Oil Pressure input is connected to a resistive type engine mounted oil pressure transducer. The output of this transducer is defined by the user by means of the Custom Curve Editor. Shutdown Level - Engine oil pressure will give a shutdown alarm in the event of the engine oil pressure falling below the displayed 'oil pressure trip' value. The 'oil pressure trip' value can be adjusted to suit user requirements.



NOTE: - *Deep Sea Electronics recommended sender. (Part No. 024-006)

ENGINE TEMPERATURE INPUT



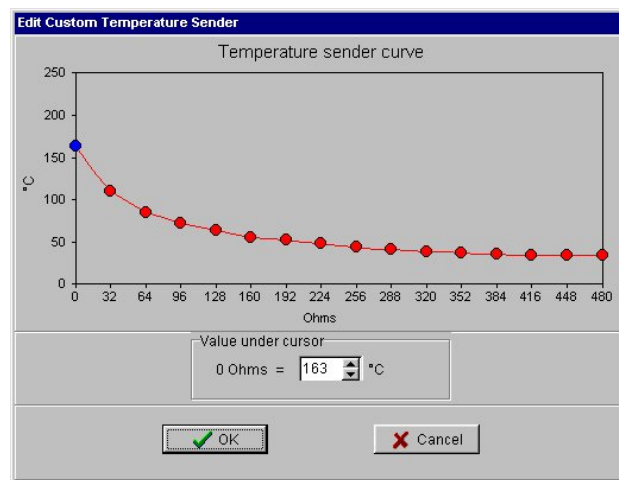
Custom curve editor



To enter the curve editor select the icon

This allows senders to be used which have not been pre-configured in the 5xxx software. Each sender curve has 16 points which map the relationship between sender resistance and reading.

Once the curve direction is started the curve must continue to follow the set direction – i.e. If resistance increases with rising oil pressure then each point on the graph must follow this. So each point must show a higher value than the one previous. If any two points on the graph are equal or reverse the initial direction the module will consider this the end of the curve and show 'over-range' for values which are past this point.

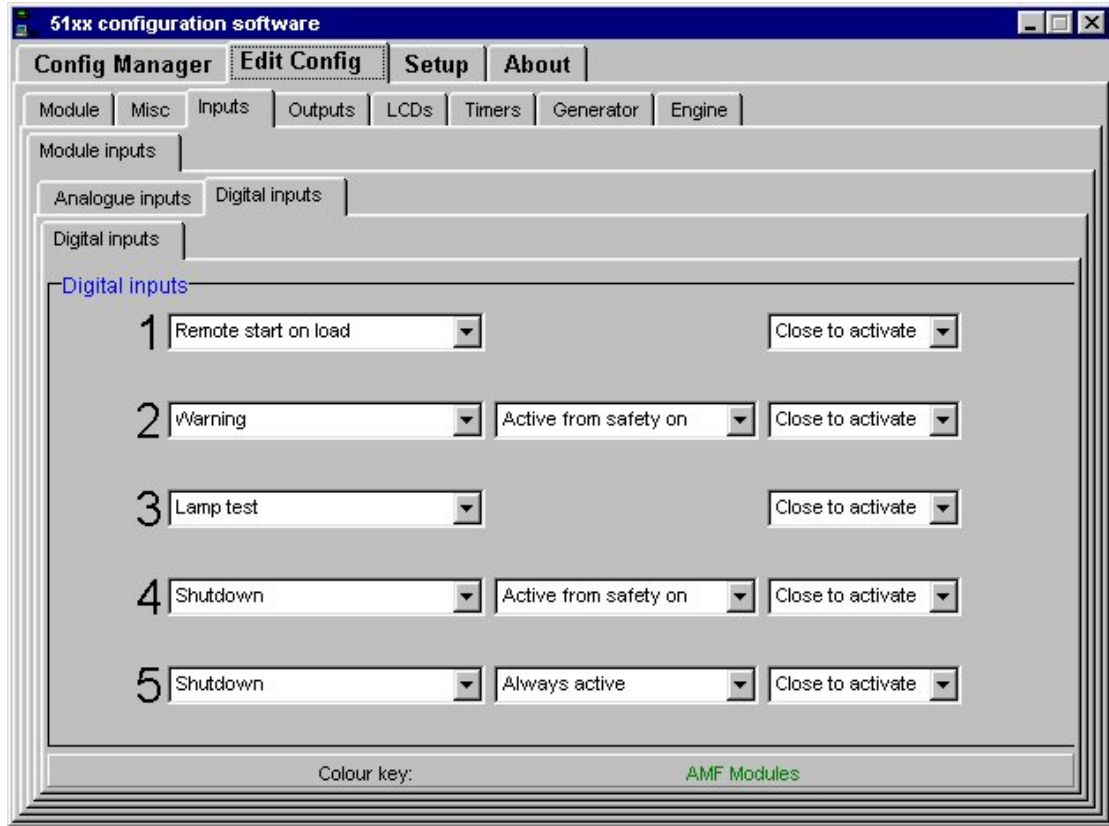


Function	Description
High Coolant Temperature settings	<i>Not Used</i> - The Coolant Temperature input will not be monitored. <i>Digital Closed, Normally Closed</i> - The Coolant Temperature input is fed from an engine mounted digital temperature switch. This switch returns a closed signal during low temperature conditions, should the temperature rise above the switch manufacturers trip point the switch contacts will open. <i>Digital Open, Normally Open</i> - The Coolant Temperature input is fed from an engine mounted digital temperature switch. This switch returns an open signal during low temperature conditions, should the temperature rise above the switch manufacturers trip point the switch contacts will close. <i>VDO match, 120°C*</i> - The Coolant Temperature input is connected to a resistive type engine mounted temperature transducer. The output of this transducer matches that of a VDO type sender with an operating range of up to 120°C. <i>Datcon HIGH match</i> - The Coolant Temperature input is connected to a resistive type engine mounted temperature transducer. The output of this transducer matches that of a Datcon HIGH type sender. <i>Datcon LOW match</i> - The Coolant Temperature input is connected to resistive type engine mounted temperature transducer. The output of this transducer matches that of a Datcon LOW type sender <i>Murphy</i> - The Coolant Temperature input is connected to a resistive type engine mounted temperature transducer. The output of this transducer matches that of a Murphy type sender. <i>Cummins</i> - The Coolant Temperature input is connected to a resistive type engine mounted temperature transducer. The output of this transducer matches that of a Cummins type sender. <i>User Configured</i> - The Coolant Temperature input is connected to a resistive type engine mounted temperature transducer. The output of this transducer is defined by the user by means of the Custom Curve Editor. 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: - *Deep Sea Electronics recommended sender. (Part No: 024-007)

DIGITAL INPUTS



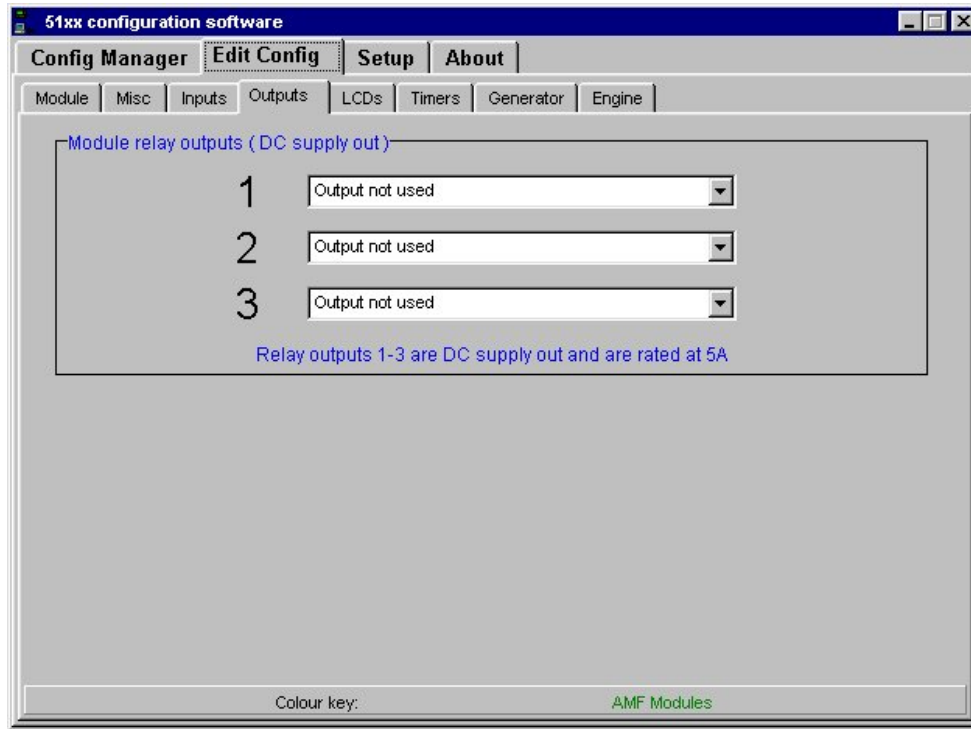
Polarity

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.

Function	Description
Warning	Gives an alarm only when activated (no shutdown) Always active – Will activate as long as the module is powered up. Active from safety on – Is only active when the safety on timer has timed out.
Shutdown	Gives an alarm and shuts down the engine.
Remote Start on Load	If this input is active, the 51xx will operate thus: - To use this function the 51xx should be placed in the AUTO mode. The module will perform the start sequence and transfer load to the generator.
Electrical Trip	An alarm condition will be given; the set will be removed from the bus and shutdown after the cooling timer.
Lamp Test	This input is used to provide a test facility for the front panel indicators fitted to the 51xx module. When the input is activated all LED and LCD indicators will illuminate.
Simulate Mains available	This function is provided to over-ride the 5120 module's (AMF module only) internal monitoring function. If this input is active the module will not respond to the state of the incoming AC mains supply. 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
Low Oil Pressure Switch	This input forces the oil pressure sender to be metering only. The low oil pressure shut down is then activated by this input.
Always Active	The input selected to be a warning or a shutdown alarm even when the module is in the STOP/RESET MODE.
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.

4.4 OUTPUTS

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



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

Polarity

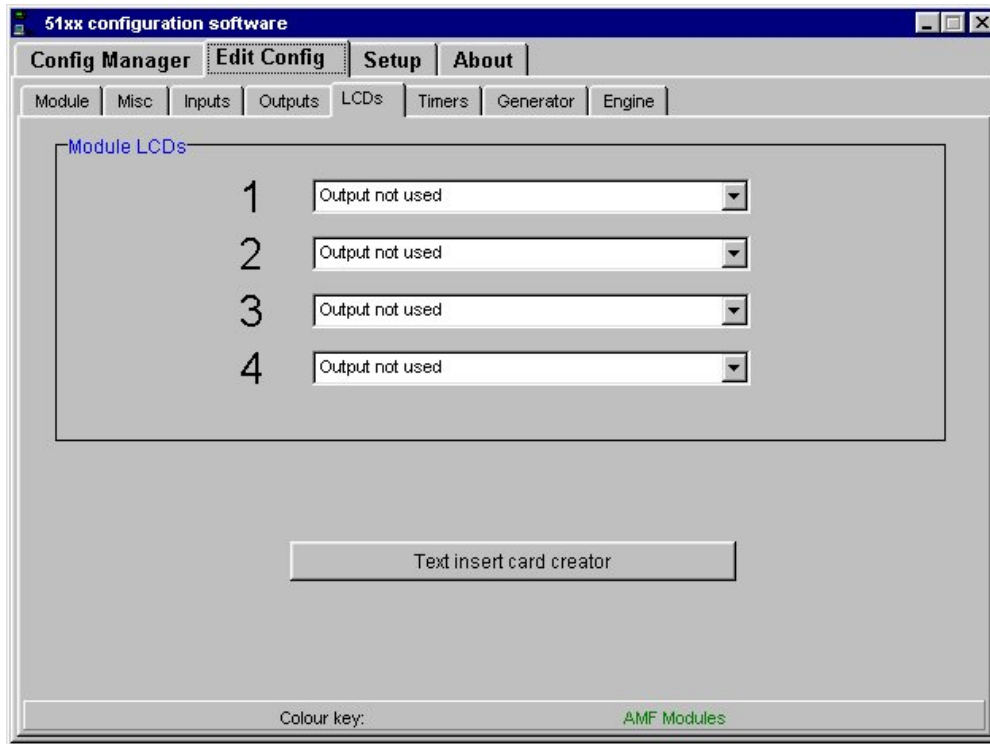
Each of the outputs can be configured as:

- a) **Energised** - Normally open relay contact which closes on activation.
- b) **De-energised** - Normally closed relay contact, which opens on activation.

Function	Description
Output Not Used	This output is not used.
Air flap Relay	This output controls the closing of the air-flaps in an Emergency Stop or Over-speed situation.
Auxiliary input 1 active	This output indicates that the auxiliary input number 1 is active.
Auxiliary input 2 active	This output indicates that the auxiliary input number 2 is active.
Auxiliary input 3 active	This output indicates that the auxiliary input number 3 is active.
Auxiliary input 4 active	This output indicates that the auxiliary input number 4 is active.
Auxiliary input 5 active	This output indicates that the auxiliary input number 5 is active.
Close Generator	This output source is intended to be used to control the load switching device. Whenever the 51xx module selects the generator to be on load this control source will be active.
Common alarm	This output indicates that a warning, electrical trip or shutdown alarm has been activated. If a Warning alarm is activated, this output is normally self-resetting on removal of the fault, if a Shutdown or Electrical fault alarm is activated, this output can only be reset by removal of the fault and by then pressing the Stop Reset button.
Energise to stop	This 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.
Engine Running	This output indicates when the engine is running and 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.
Pre-heat (during preheat timer)	This 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)	This 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)	This output controls the pre-heater. As 'Pre-heat until safety on' but pre-heat continues to be available until the warming up timer has elapsed.
Pre-heat (until safety on)	This 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.
Shutdown alarm	This 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.
System in Auto Mode	This output indicates that the module is in the Auto mode.
Warning alarm	This output indicates that a warning alarm has been activated. This output is normally self-resetting on removal of the fault.

4.5 LCD's (FRONT PANEL INDICATORS)

This menu allows the configurable LCD indicators to be changed to suit the users requirements. The following is displayed:- (Typical Settings for information only).



NOTE: - 1: - Each of the four configurable LCD indicators have the same selection of choices as stated in the edit outputs section of this manual.

2: - Each of the four configurable LCD indicators can be set to any function, allowing for flexible configuration.

Polarity

Each of the LCD's can be configured as:

Lit - Normally extinguished LCD indicator, which illuminates on activation.

Control Source

Refer to Output Selection shown in Edit Outputs section of this manual.

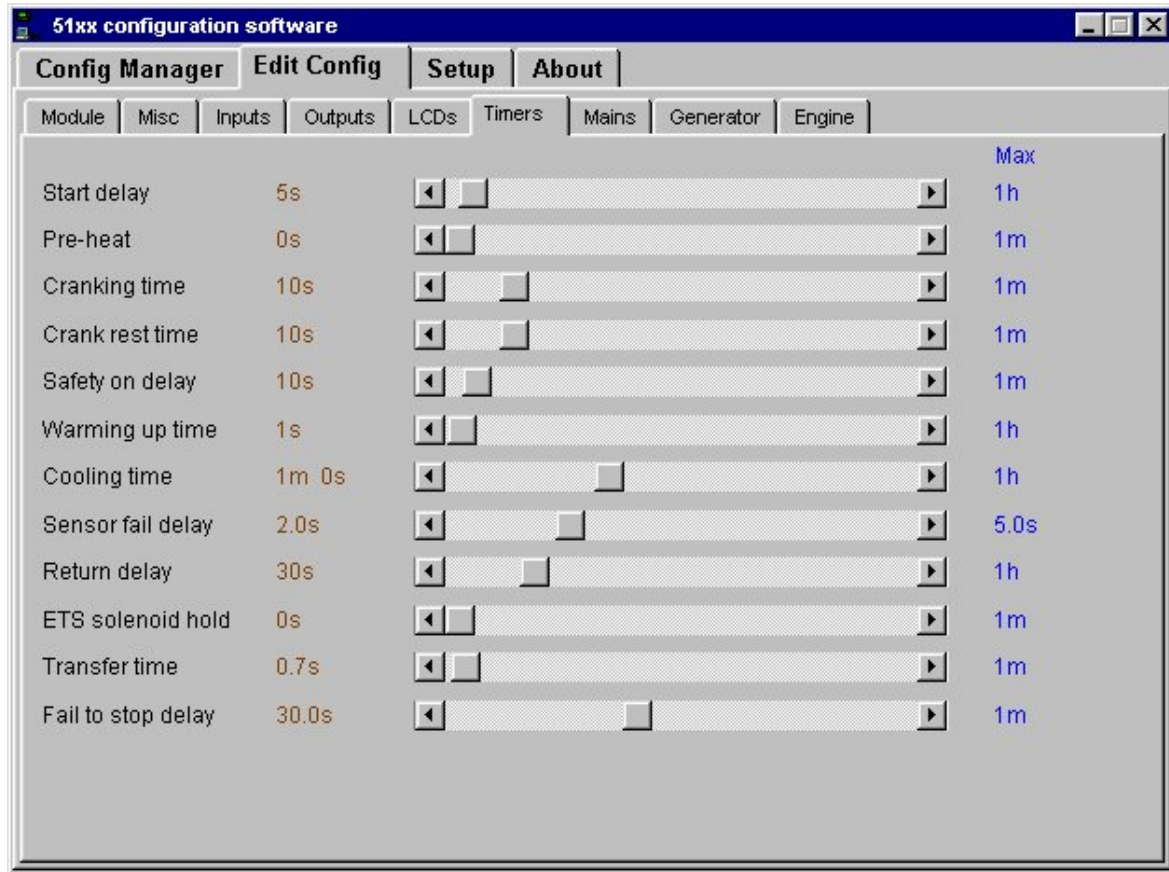
LCD identification



The above diagram indicates which LCD number in the configuration corresponds to which LED/LCD indicator on the front label.

4.6 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.

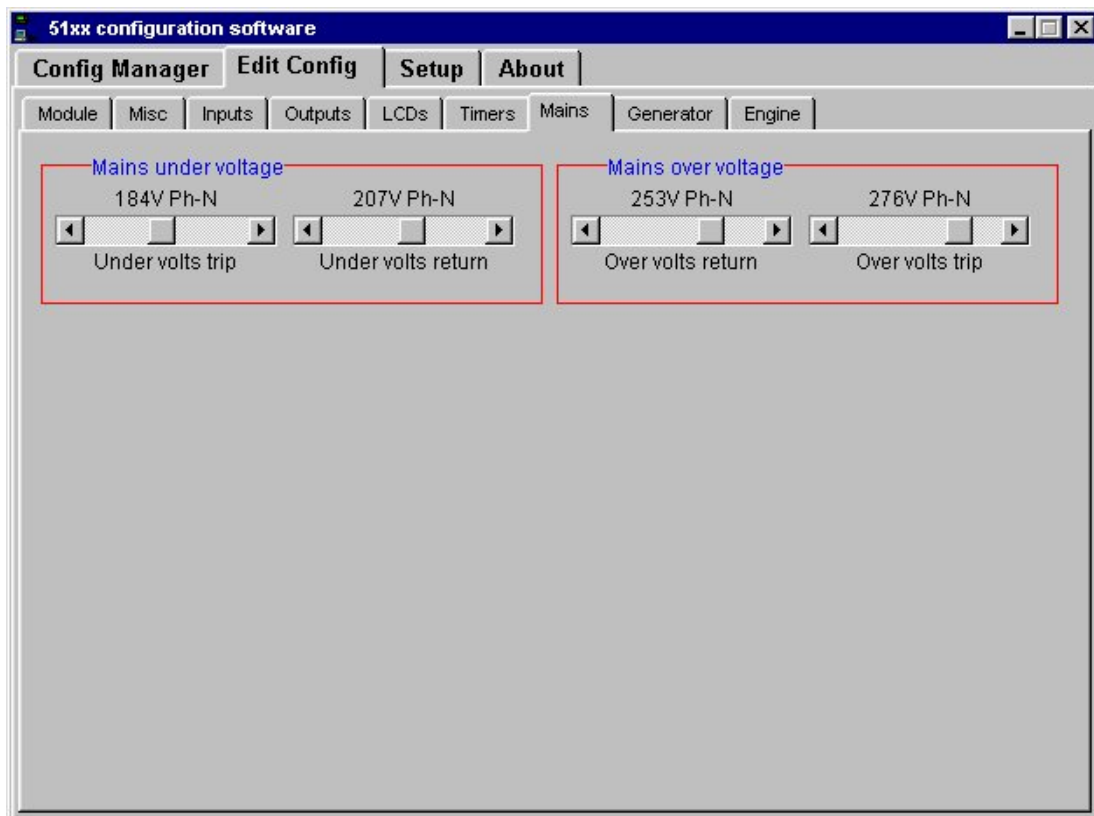
Timer Descriptions:

Function	Description
Start delay	This timer dictates how long the module will wait after it has received a remote start signal (or mains failure signal 5220 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.
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.
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.
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.
Sensor fail delay	(Only available if using Magnetic pick-up) This can only be used if magnetic pick speed sensing is selected. Once cranking has commenced the module must receive a speed signal within this time. If no signal is present the generator will be shutdown and a Loss of Speed Sensing alarm given.

Function	Description
Return delay	This timer dictates how long the module will wait before it will un-load 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.
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
Transfer time (5120 AMF module only)	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.
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.

4.7 MAINS (5120 AMF MODULE ONLY)

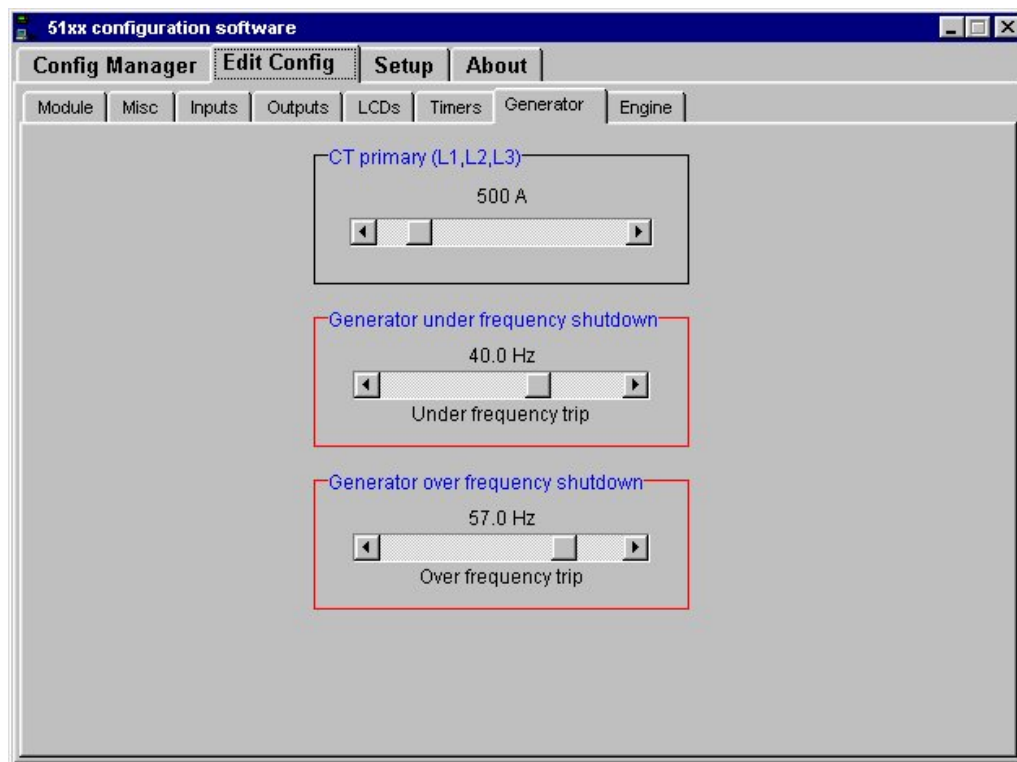
This menu allows the mains sensing configurable trip values to be edited to the users required levels. The following menu is displayed:



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 5120 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 5120 module will consider that the supply is back within 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 5120 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 - This is the voltage that the incoming mains supply must return to before the 5120 module will consider that the supply is back within limits. (i.e. With a OV trip of 276.0V and a OV return of 253.0V, the mains voltage must return to 253.0V following an over voltage event to be considered within limits.)

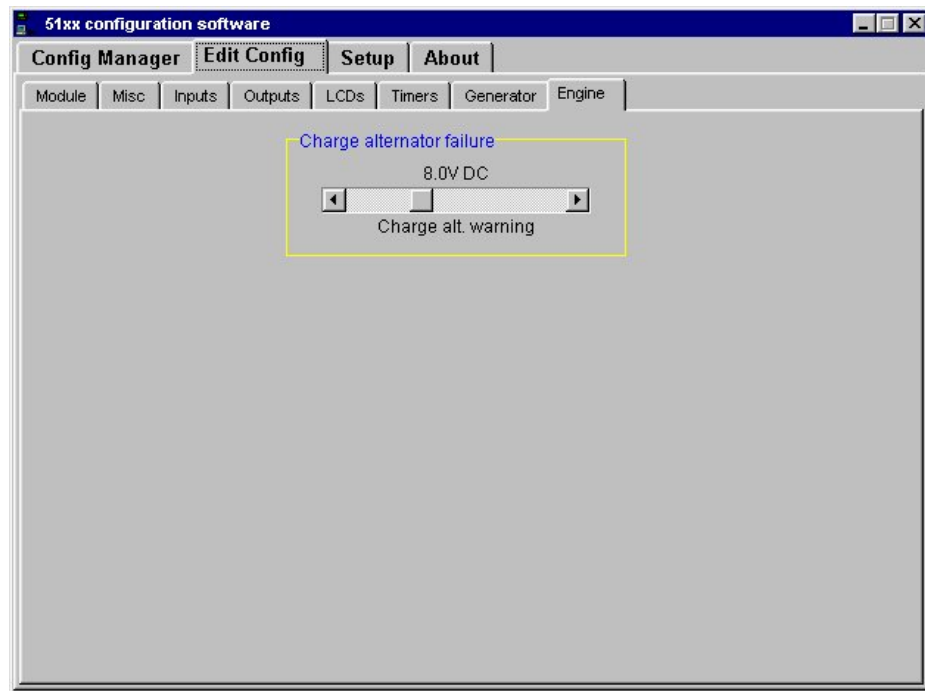
4.8 GENERATOR

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



Generator CT & Shutdown Settings	Function
CT Primary (L1,2,3)	This setting is used to set the primary current rating of the three phase monitoring CT's. The secondary of the CT's should be rated at 5 amps output.
Generator Under frequency	This setting is used to configure the generator under frequency trip / shutdown level.
Generator Over frequency	This setting is used to configure the generator over frequency trip / shutdown level.

4.9 ENGINE

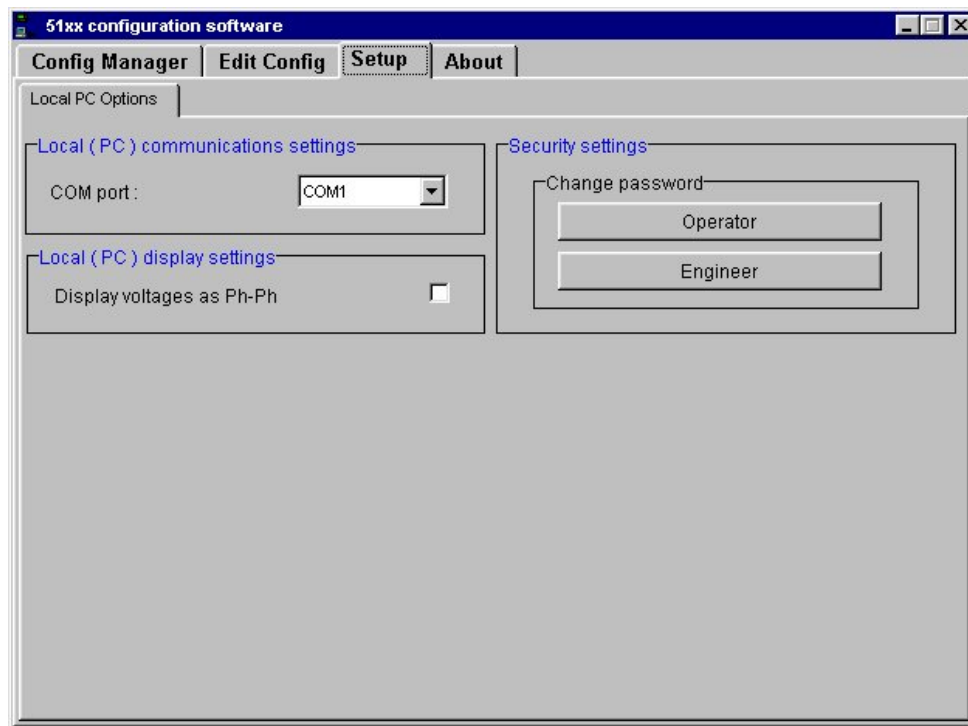


Engine Charge Alternator	Function
Charge Alternator Failure Warning	Charge Alternator Failure Warning: Charge alternator low voltage will give a warning alarm in the event of the charge alternator voltage falling below the displayed '<i>Charge alternator fail alarm</i>' value. The '<i>Charge Fail alarm</i>' value can be adjusted to suit user requirements. As the input is a true analogue value total failure of the charge alternator is not the only failure that the module will provide protection for. Faults which cause the output voltage to fall, such as worn brushes etc., will cause the alarm to operate.

5 SETUP

LOCAL PC OPTIONS

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
Communications Settings	Communications settings configure how the software is to communicate with the module. COM Port This menu option is used to configure the software to use the appropriate COM port on the PC. USB  NOTE: -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 set up tab for the USB P810 to operate. The 'virtual COM port' may only be visible when the USB P810 is connected to the PC. RS232 Possible ports are COM1, COM2, COM3 or COM4. The COM ports are the RS232 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.

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:



A dialog box titled "Change Password" with a blue header bar. It contains two text input fields. The first field is labeled "Enter new password :" and contains seven asterisks. The second field is labeled "Re-enter new password :" and also contains seven asterisks. At the bottom, there are two buttons: "OK" with a green checkmark icon and "Cancel" with a red X icon.

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:



An "Information" dialog box with a blue header bar. It features an information icon (a lowercase 'i' in a circle) on the left. To the right of the icon, the text reads "New passwords are not the same. Please try again". At the bottom center, there is an "OK" button with a green checkmark icon.

Engineer Password

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

If the software is accessed using the engineering password, all values are available for modification including the complete module configuration and sender calibration, internal clock and hours run counter.

 **NOTE: - The 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 ← button.**

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

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