DEEP SEA ELECTRONICS PLC

7xx series configuration software for Windows™

Software Manual

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1 DESCRIPTION

The DSE **7xx series** configuration software allows the 710 / 720 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 controlled access to these values and also has diagnostic monitoring facilities.

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.

Configuration editor for the 7xx range of modules.

♥ Loading, please wait...

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 7xx series configuration software; this is the common configuration software for 710 and 720 modules.
A separate manual deals with the operation of the individual modules.

2   INSTRUCTIONS

2.1   MINIMUM SYSTEM REQUIREMENTS

Processor   *486 66Mhz*
Operating System   *Windows Xp, 2000, Me, 98, 95*
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 com port is needed to communicate with the 810 interface and 5xxx configuration software (see note below)*

2.2   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

### 2.2.1   RS232 P810 INSTALLATION

Connect the P810 interface to your PC RS232 serial (COM) port. You may need to use the supplied 25-9 way adaptor to do this.
There are no additional drivers to install. 7xx PC Configuration software will detect your comport and display it for selection in the SETUP section of the software.

⚠**NOTE:- If your PC does not have an RS232 port, it is possible to add them to desktop PCs using a PCI RS232 card and to laptops using a PCMCIA RS232 card. Although USB-RS232 adaptors are available, you may experience problems when using them. This is not a fault of the P810 interface or 7xx software but is a consequence of the "emulated" RS232 port. It is recommend that a 'real' comport is added as detailed above, or the user upgrades to the USB version of the P810 interface module.**

2.2.2   USB P810 INSTALLATION

- Ensure 7xx PC configuration software is NOT running and connect the P810 USB interface to a PC USB port.
- After a short delay, the computer will detect the device and show two "Found New Hardware" messages, followed by the installation wizard.

Found New Hardware

USB P810 Port

**Found New Hardware**

USB Serial Port
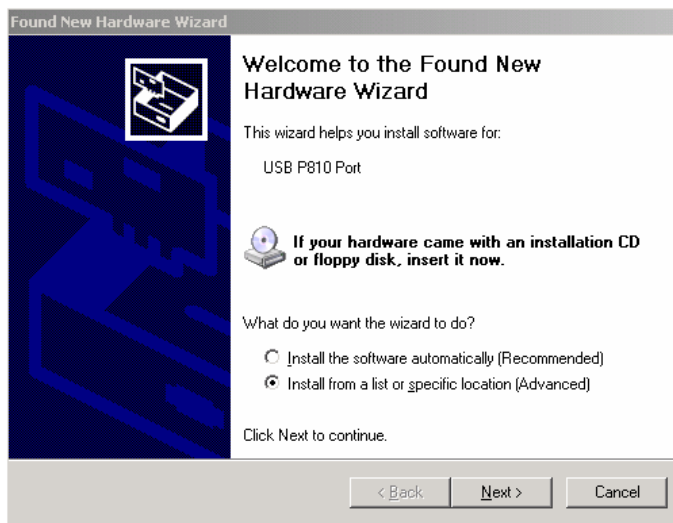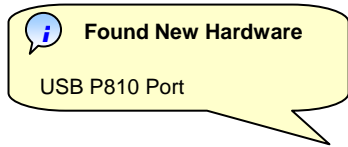
- Select *"Install from a list or specific location (Advanced)"* then click **Next**
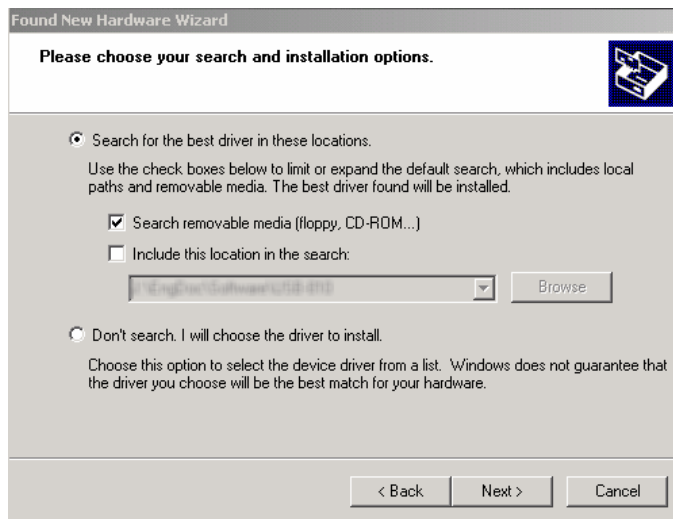
- If you installing from the SoftwareCD, select *"Search removable media (floppy, CD-ROM…)"* otherwise, if you are installing the driver downloaded from the website, select "**Include this location in the search**:" and "Browse" to the driver location.
- Click **Next**

- Windows will search for the drivers in the selected location.
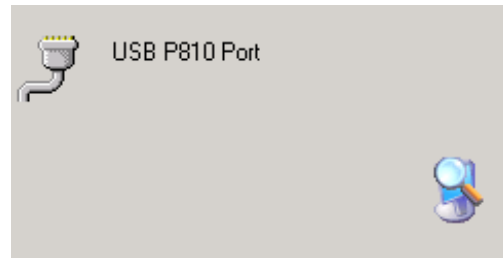
- Windows Xp will show the Windows Logo compatability box. The software has been extensively tested on Windows Xp, so click "***Continue Anyway***".
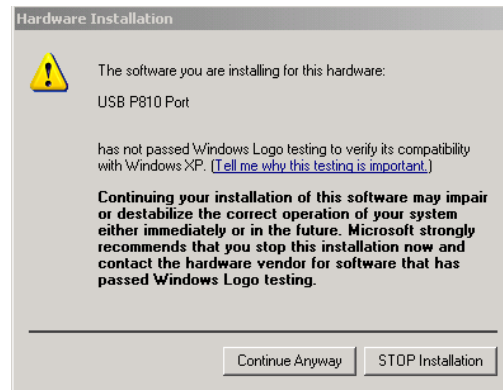
- Once the USB P180 Port has been installed, the drivers for the USB Serial Port will also be installed from the same location.
- Once complete, it is recommended that the PC is shutdown and restarted before the interface is used in conjunction with DSE configuration software.
- When 7xx configuration software is started, the "virtual comport" used by the 810 USB interface will be listed for selection in the SETUP section of the PC software.

2.3   SOFTWARE INSTALLATION

Installing '7xx series configuration software For Windows™' program From Software CD

⚠**NOTE: - As 7xx 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.deepseaplc.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.deepseaplc.com – Once registered you will be notified of any updates to the software to ensure that you always have access to the latest features.**

3 CONFIG MANAGER

Once loaded the '***Main***' Menu is displayed
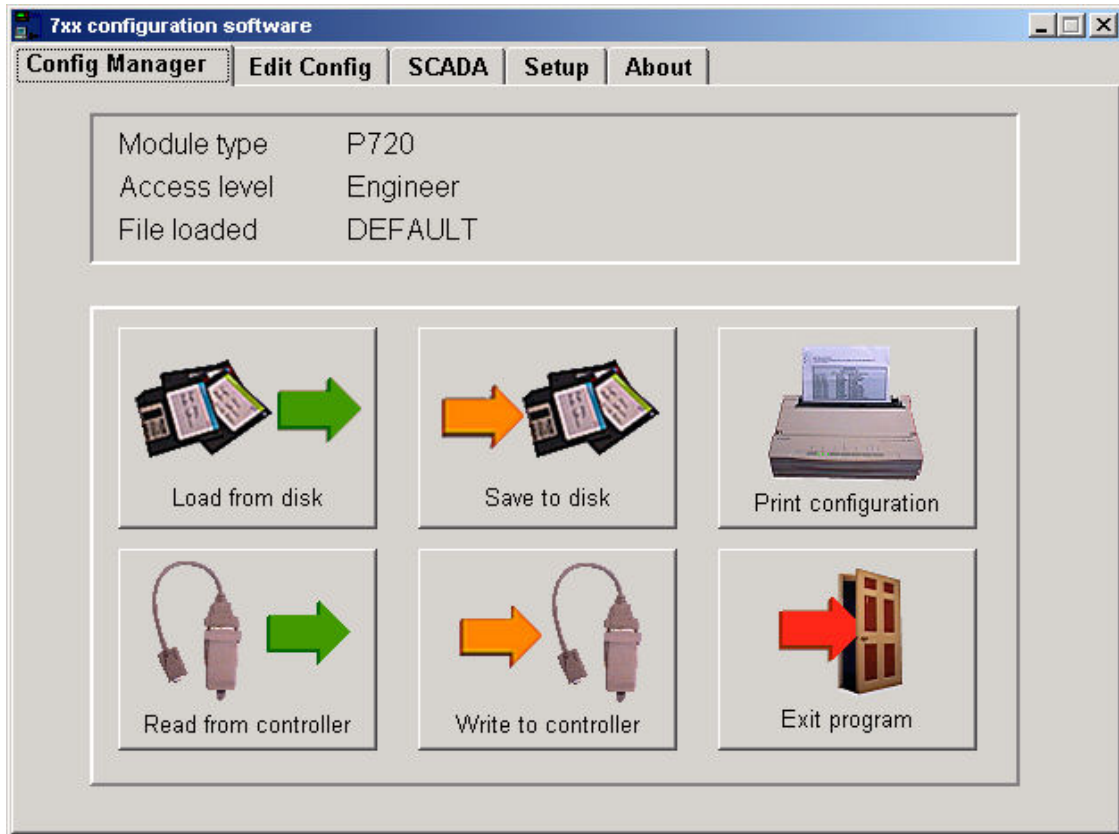
Module Type: - This indicates the type of module for which the 7xx series software is currently configured. This will automatically be selected to the correct module when a configuration file is 'Loaded' from disk or 'Read' from the module. It can also be changed under the *'Misc'* tab in the '*Edit 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 7xx 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 7xx 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 7xx 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 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 7xx 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 not possible to write a 710 configuration file to a 720 module and vice versa. However, it is possible to base one configuration on another and select the correct module type on the "module" tab before writing the configuration to the module.**

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4 EDIT CONFIG MENU

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.

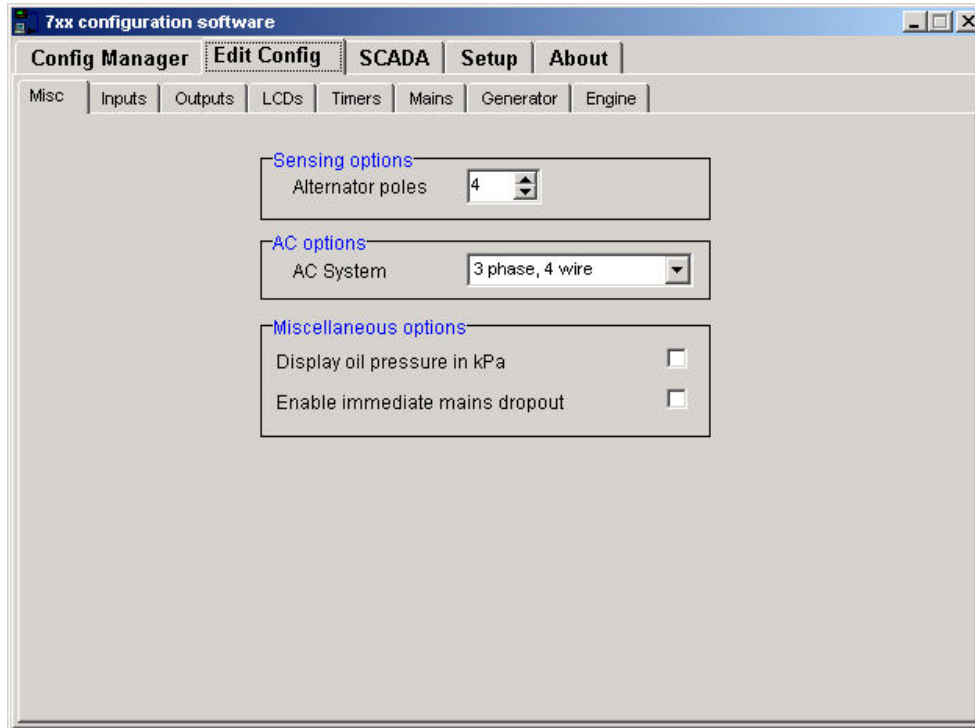## 4.1 MODULE

This menu allows the user to choose what type of module the configuration file is to be for.
The following is displayed:
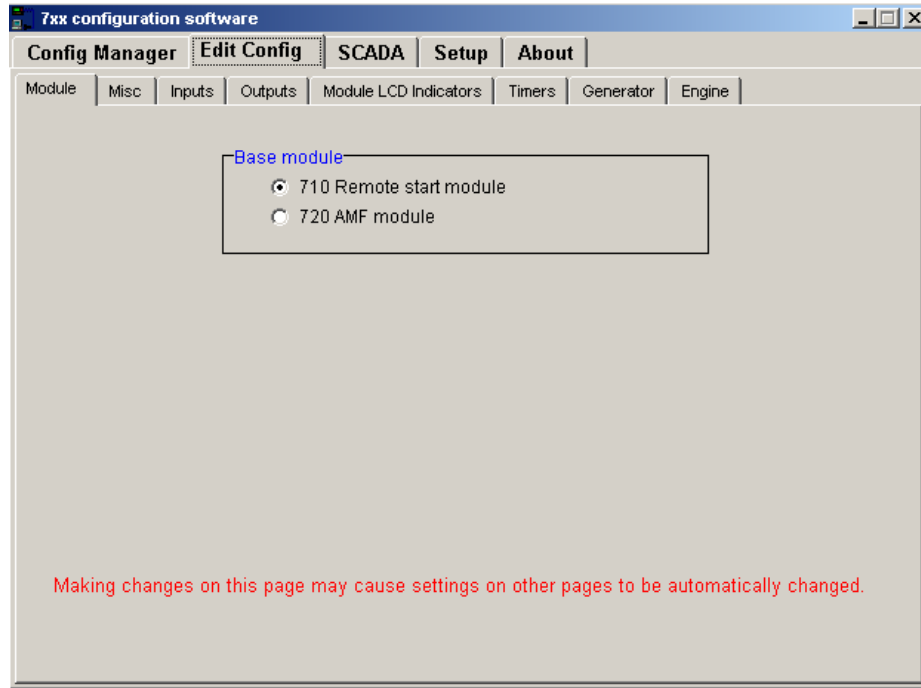
⚠**NOTE:- It is not possible to write a 710 configuration file to a 720 module and vice versa. However, it is possible to base one configuration on another and select the correct module type on the "module" tab before writing the configuration to the module.**

4.2   MISC

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


MISCELLANEOUS DESCRIPTION

Item	Function
Alternator poles	The number of alternator poles needs to be set to allow the module to determine the engine speed.
AC Options	These settings are used to detail the type of AC system to which the module is connected: - **AC system -** *1 phase 2 wire - (L + N)* *3 phase 4 wire – (L1 + L2 +L3 +N)*
Miscellaneous Options	**Display oil pressure in kPa** ☐ = Oil pressure is displayed on the module as PSI and bar ☑ = Oil pressure is displayed on the module as kPa **Enable Immediate Mains Dropout (720 module 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.

4.3   INPUTS

This menu allows the configurable inputs to be changed to suit the users requirements. The following is displayed: -
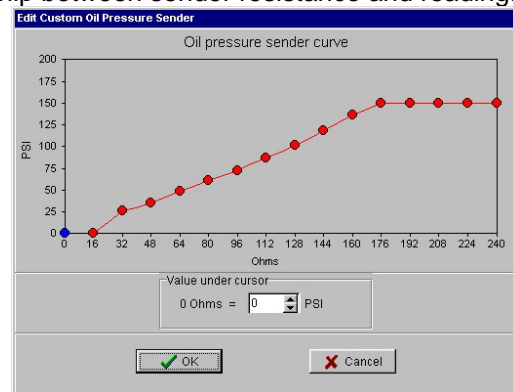
4.3.1   ANALOGUE INPUTS
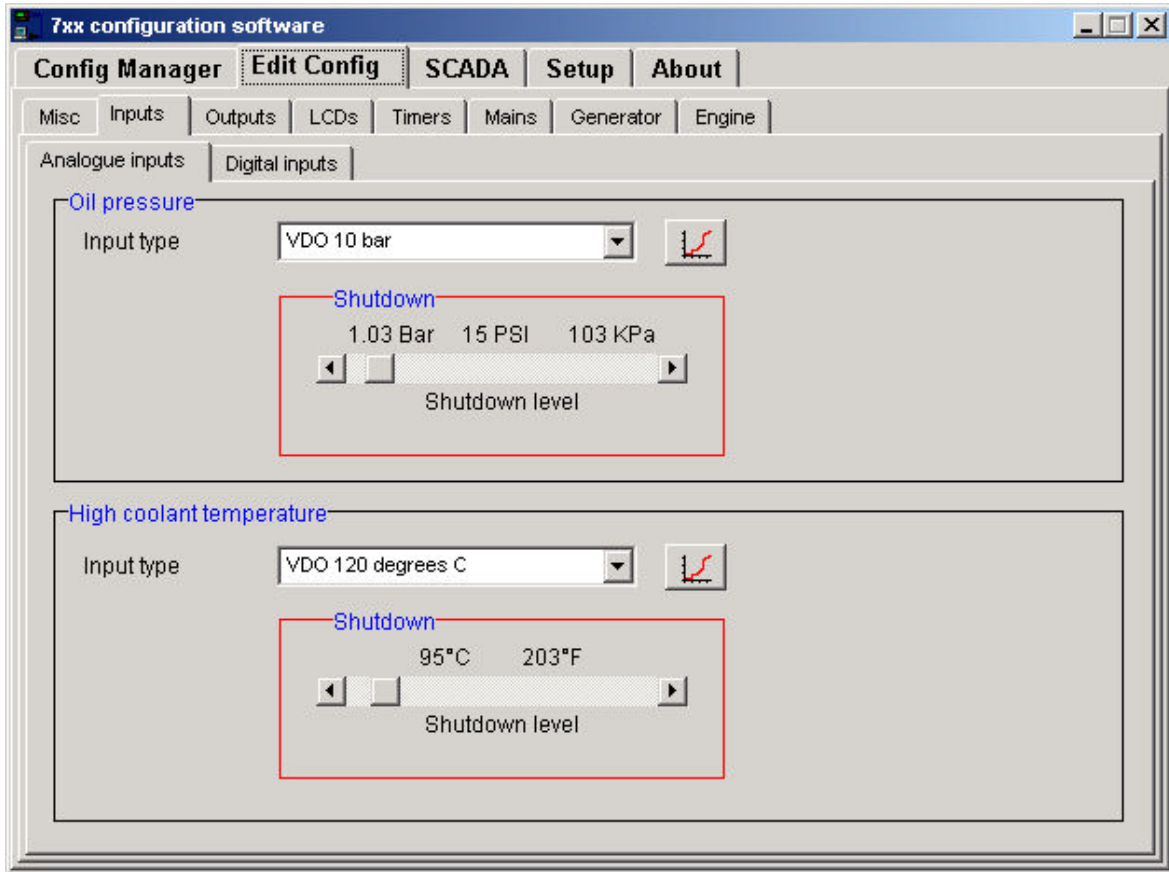
Custom curve editor

To enter the curve editor select the icon
This allows senders to be used, which have not been pre-configured in the 7xx 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. Therefore, 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 that are past this point.

| Function	Description
Oil Pressure settings	This section is used to configure the Oil Pressure sender input. **Input Type: -** *Disabled* - The Oil pressure input will not be monitored. *Digital - closed for low oil pressure* - 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. *Digital - open for low oil pressure* - 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. *VDO match, 0-5bar* - 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. *VDO match, 0-10bar** - 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. *Datcon match, 0-5bar* - 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. *Datcon match, 0-7bar* - 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. *Datcon match, 0-10bar* - 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. *Murphy, 0-7bar* - 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. *User Defined* - 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 -** 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)**

Function	Description
High Coolant Temperature settings	This section is used to configure the Coolant Temperature sender input. **Input Type: -** *Disabled -* The Coolant Temperature input will not be monitored. *Digital Switch, Normally Closed -* 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. *Digital Switch, Normally Open -* 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. *VDO match, 120ºC* -* 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. *Datcon HIGH match -* 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. *Datcon LOW match –* 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 *Murphy -* 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. *Cummins –* 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. *PT100 –* The Coolant Temperature input is connected to a resistive type engine mounted temperature transducer. The output of this transducer matches that of a PT100 type sender however accuracy is limited to ±5°C. *User Defined -* 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. The Coolant temperature must return below the '*coolant temperature return*' setting before the 7xx 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 '*coolant temperature trip*' value. The '*coolant temperature trip*' value can be adjusted to suit user requirements.

⚠ **NOTE: - *Deep Sea Electronics recommended sender. (Part No: 024-007)**

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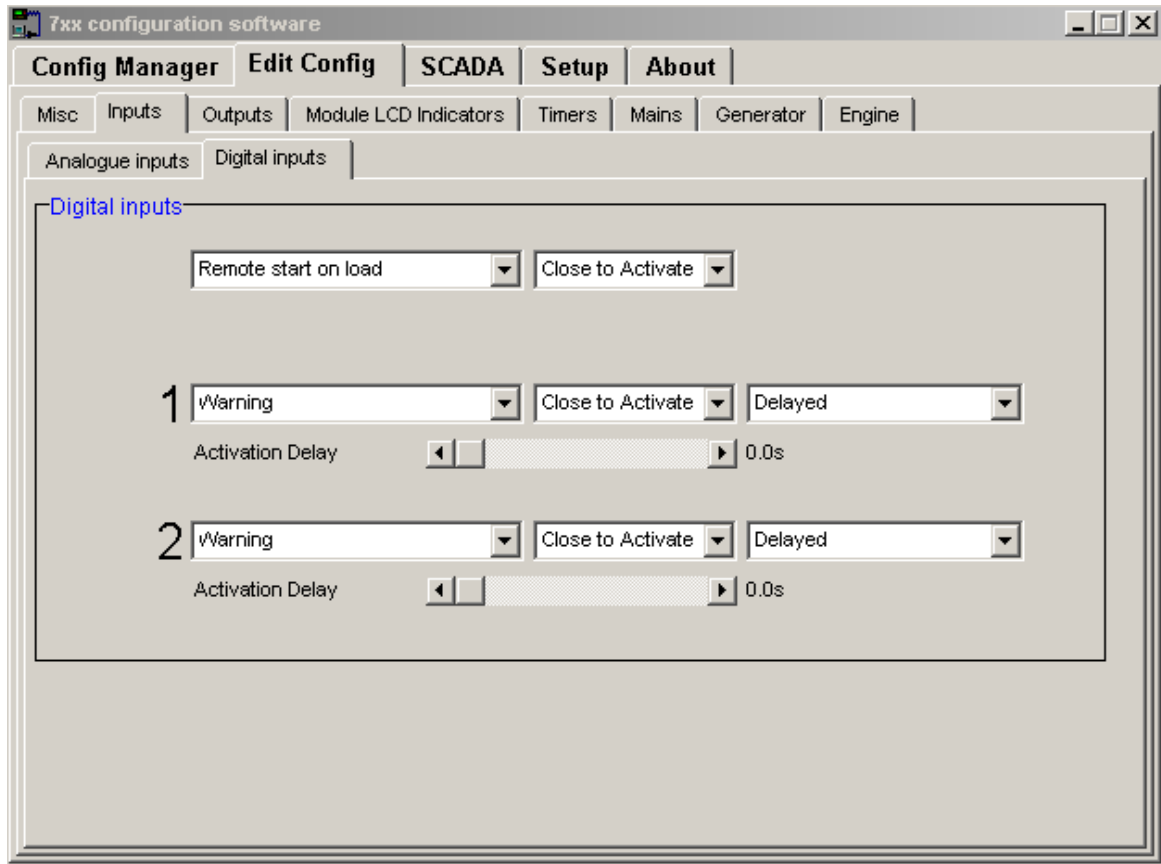
Polarity
The polarity of the input switching can be configured to be either **"Close to Activate"**, this is a normally open switch, and closes to negative when activated. Alternatively **"Open to Activate"**, this is a Normally Closed switch to negative, and opens when activated.

Activation delay
This allows for a delay between the input becoming active and the module acting upon it.
For instance, this can be used with a float switch to prevent spurious trips as the liquid moves around in the tank, or can be used to create a delayed alarm that will become active x seconds after the input is received.

⚠**NOTE:- Activation delay is only available for inputs 1 & 2 when Warning, Shutdown or Electrical Trip (input 2 only) is selected.**

Function	Description
User Configured	This input is configured to perform an auxiliary function, this may be any of the following: - **Warning** *(Alarm only, no shutdown)* **Shutdown** *(Alarm and shutdown)* **Electrical Trip** *(Alarm/off-load generator followed by shutdown after cooling)* This 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.
Lamp Test	This input is used to provide a test facility for the front panel indicators fitted to the **710/720** module. When the input is activated, all LED and LCD indicators will illuminate.
Remote Start on load	If this input is active and the **710/720** is in the **AUTO** mode, the module will perform the start sequence as described earlier in this manual.
Simulate Mains available (720 module only)	This function is provided to over-ride the internal mains 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

4.4   OUTPUTS

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

---
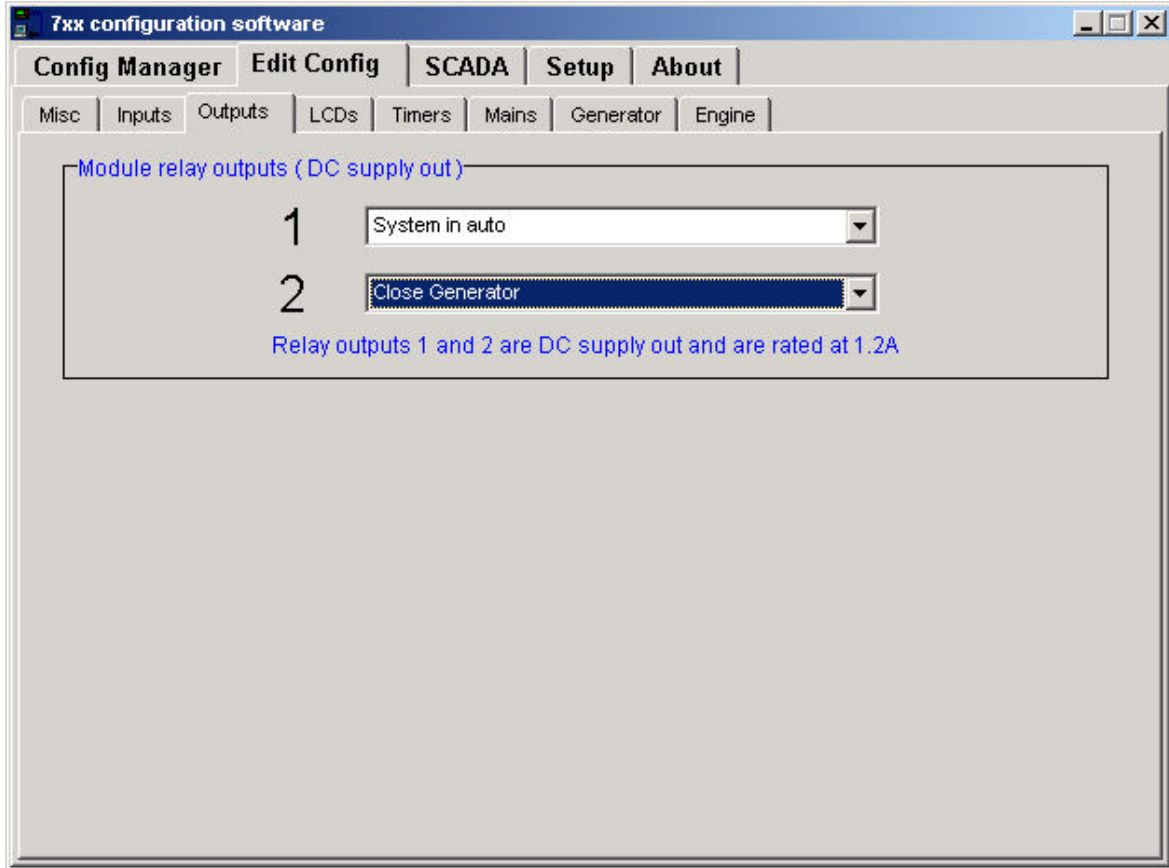
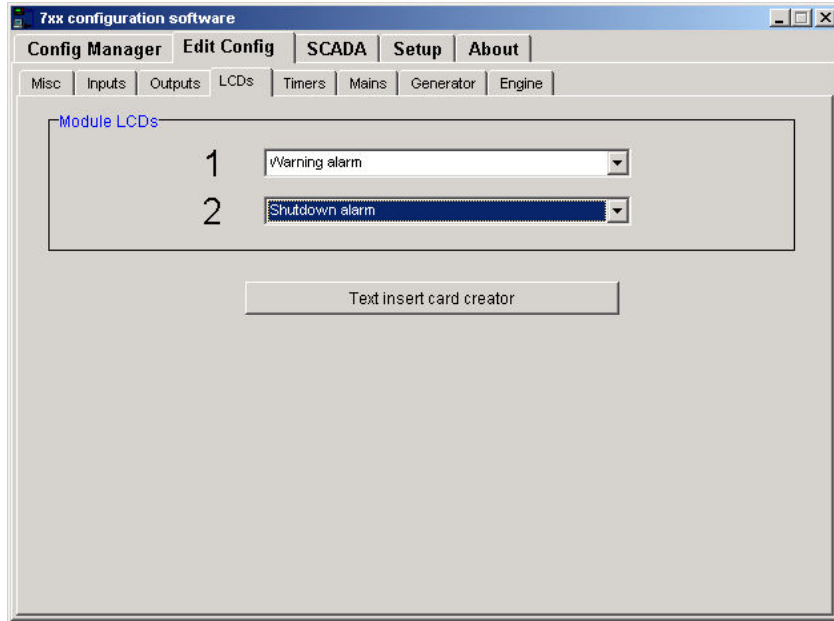**⚠NOTE:- The above screenshot shows 720 outputs. Model 710 has 2 additional output relays.**

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

Output selection

Function	Description
Output Not Used	This output in not used.
Air flap	This output controls the closing of the air-flaps in an Emergency Stop or Over-speed situation.
Auxiliary Input 1active	This output indicates that Digital input 1 is active.
Auxiliary Input 2 active	This output indicates that Digital input 2 is active.
Close Generator	This output source is intended to be used to control the load switching device. Whenever the 7xx 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. Reset depends on whether it is a Warning or a Shutdown fault.
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.
Engine running	The output indicates that the engine is running.
Fail to start	Operates after the multiple attempts to start have expired and the module has not detected that the engine has fired.
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 timer)	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.
Shutdown alarm	This output indicates that a shutdown alarm has been activated.
System in Auto Mode	The output indicates that the module is in the Auto mode.
Warning alarm	This output indicates that a warning alarm has been activated.

4.5 MODULE LCD INDICATORS

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

⚠**NOTE:- The above screenshot shows 720 indicators. Model 710 has 2 additional indicators.**

⚠**NOTES:-**
1: - Each of the configurable LCD indicators has the same selection of choices as stated in the edit outputs section of this manual.

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

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

LCD IDENTIFICATION

The adjacent diagram indicates the positions of the two LCD indicators on the module's fascia. There are 2 possible images that will appear alongside the indication text :

▶ The item is indication only (not an alarm). For instance this could indicate "System in Auto"

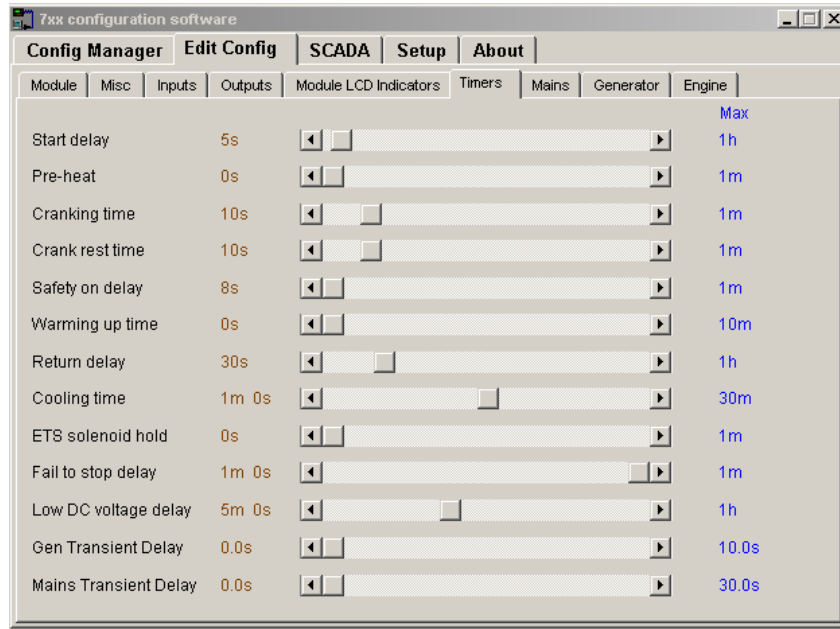❗▶ The item has generated a Warning or Shutdown alarm condition.
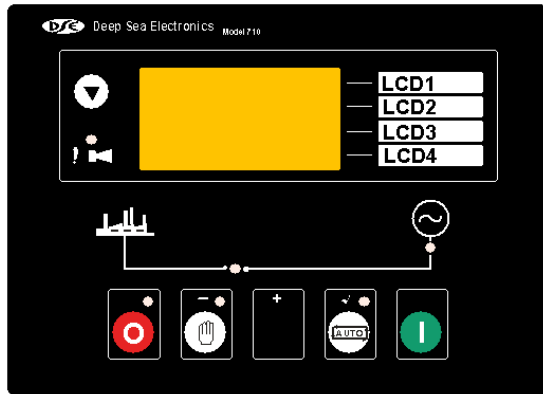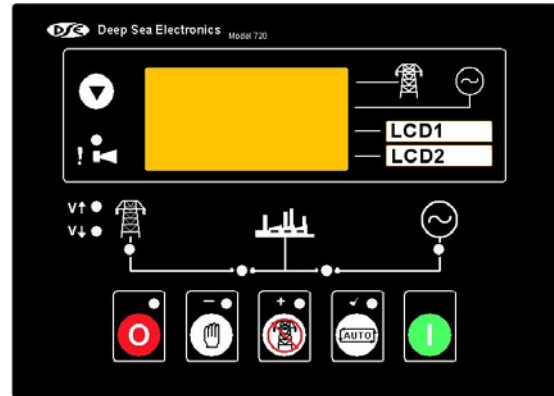
Model 710   Model 720

4.6   TIMERS

This menu allows the configurable system timers to be changed to suit the user's requirements. The following menu is displayed:
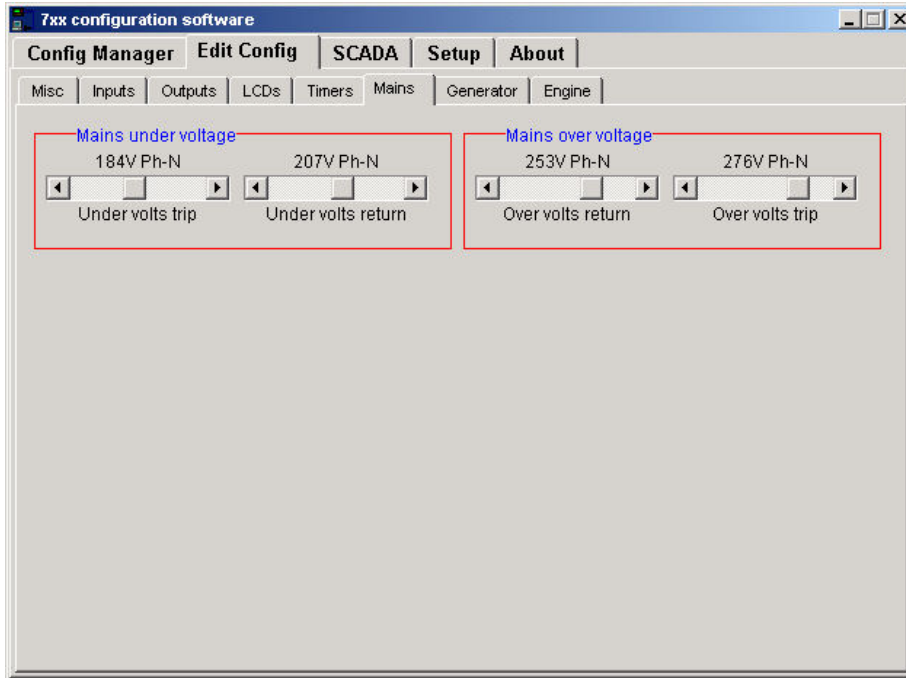

⚠**NOTE: - Timers can be adjusted by clicking on either the up or down arrow or by clicking on the bar and dragging the bar to the correct time.**
As the timers can be accurately set to exact times, they can be initially configured with the timers reduced to allow rapid testing of the finished generating 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.

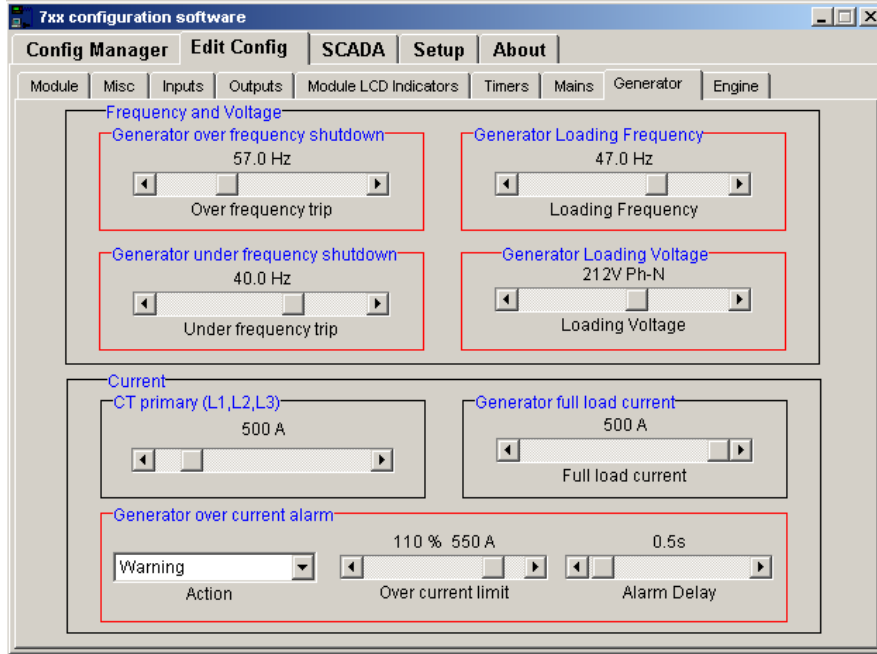| Start Timers	Function
Start delay	This timer dictates how long the module will wait after it has received a remote start signal or mains failure signal before it will attempt to start. This prevents unnecessary starting on a fluctuating mains supply, etc.
Pre-heat	This timer dictates the duration that 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.
Warming up time	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.
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	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.
Low DC Voltage 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.
Gen 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.
Mains Transient Delay (model 720 only)	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.

4.7 MAINS (MODEL 720 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 controller 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 controller module will consider that the supply is back with in limits. (I.e. With an undervolts trip of 184.0V and an undervolts 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 controller 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 to which the incoming mains supply must return before the controller module will consider that the supply is back with in limits. (I.e. With an overvolts trip of 276.0V and an overvolts 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.
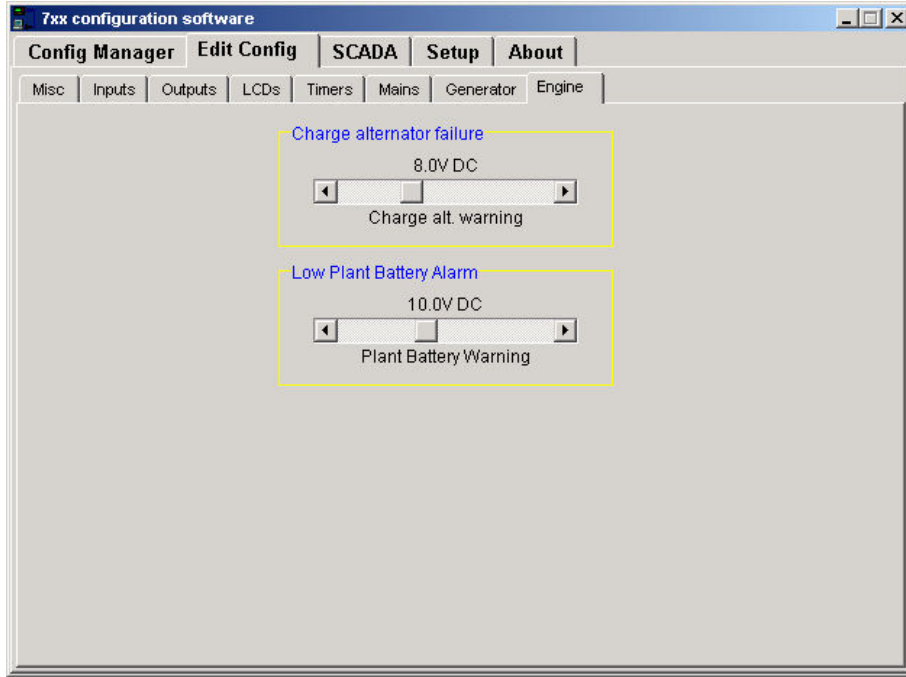The following menu is displayed:

Generator setting	Function
Frequency and voltage	These settings are used to configure the generator frequency alarms: - **Overfrequency Shutdown -** Generator Over Frequency will give a shutdown alarm in the event of the generator output rising above the displayed '*over frequency trip*' value. The '*over frequency trip*' value can be adjusted to suit user requirements. **Loading Frequency -** This is the minimum frequency the generator must be operating at before the 7xx module will consider it available to take the load. It is also the frequency above the under frequency trip that the generator output must return to before the 7xx module will consider that the supply is back with in limits. **Underfrequency Shutdown -** Generator Under Frequency will give a shutdown alarm in the event of the generator output falling below the displayed '*under frequency trip*' value. The '*under frequency trip*' value can be adjusted to suit user requirements. **Loading Voltage -** This is the minimum voltage the generator must be operating at before the 7xx module will consider it available to take the load. It is also the voltage above the under voltage trip that the generator output must return to before the 7xx module will consider that the supply is back with in limits

Generator setting	Function
Current	**CT Primary (L1,L2,L3)** This setting is used to set the primary current rating of the three phase monitoring C.T.'s. The secondary of the C.T.'s should be rated at 5 Amps output. **Generator full load current** The full load rating (Amps) of the generator **Generator overcurrent** This parameter sets the level of the overcurrent alarm. As soon as any one of the monitored generator phases exceeds this setting, an alarm is triggered (warning, shutdown or electrical trip) **Overcurrent alarm delay** Used to give a delay to the overcurrent alarm to prevent nuisance tripping caused by switching loads etc. ⚠**NOTE:- Overcurrent when configured as a WARNING will NOT open the load switch or stop engine. It is a warning alarm only, intended to give indication to the operator that the set is in overload. If the alarm occurs, the load should be reduced in line with the recommendations of the manufacturer of alternator being used.**

4.9 ENGINE

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

| Plant Battery	Function
Charge Alternator Failure	**Charge Alternator Failure -** The '*Charge Fail alarm'* 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 that cause the output voltage to fall, such as worn brushes etc., will cause the alarm to operate.
Plant Battery Undervolts	**Plant Battery Undervolts -** Low Plant voltage WILL give a warning alarm in the event of the generator plant battery voltage falling below the displayed '*low voltage alarm'* value. The '*low voltage alarm'* 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.

5 REMOTE INSTRUMENTATION

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.

⚠ NOTE: -	**The display screens are updated by information sent from the module; if the communications link to the module is lost the information displayed could be incorrect and is therefore 'greyed out'. A small icon in the bottom right of each display 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.**

5.1 MIMIC

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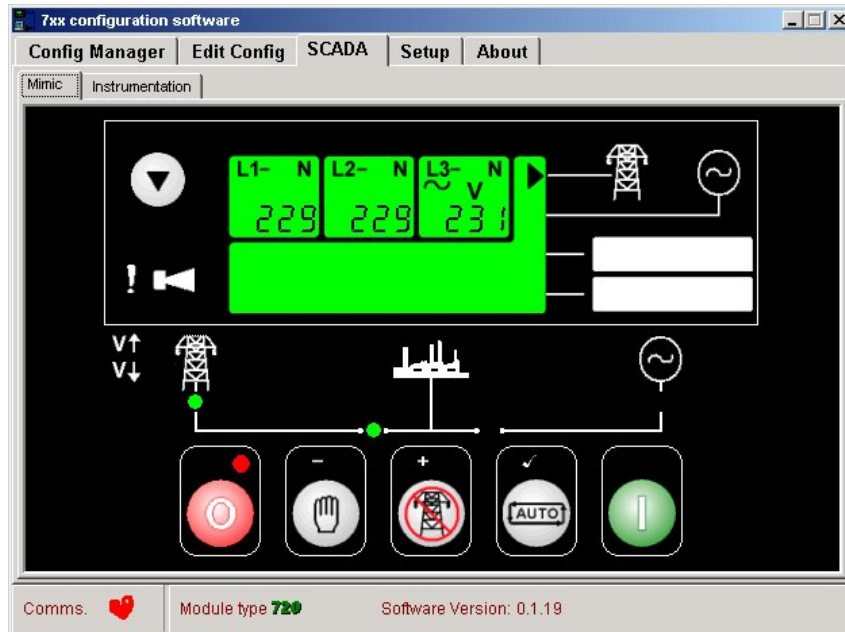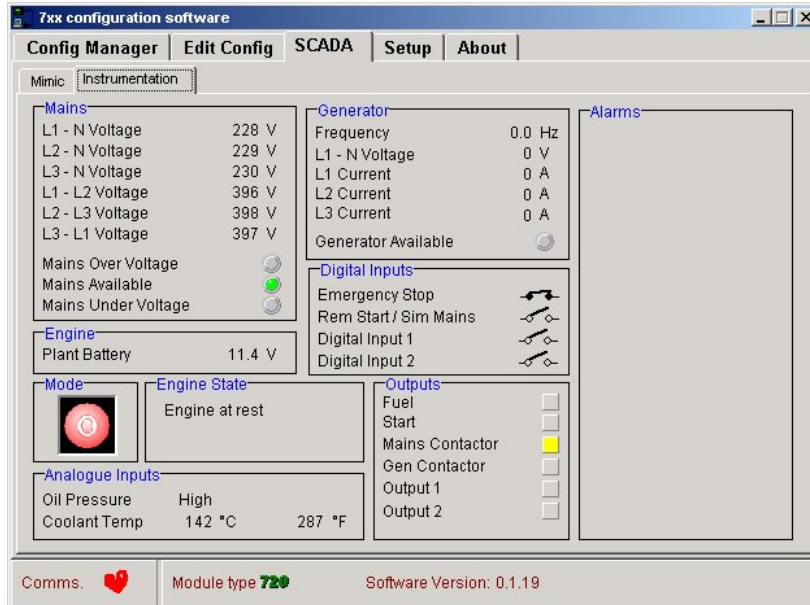

⚠NOTE:- The above screenshot shows the 720 mimic. The 710 mimic varies slightly from the one shown.

⚠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 7xx module via the 810 interface. The 810 interface cable can be extended up to 100 meters (from the module to the 810).

⚠NOTE:- Clicking on the scroll ⊽ button will change the instruments display on the PC mimic but will have no effect on the display of the module itself.

5.2   INSTRUMENTATION

If the instrumentation tab is selected the display will show:

⚠️**NOTE:- The above screenshot shows the 720 mimic. The 710 mimic varies slightly from the one shown.**
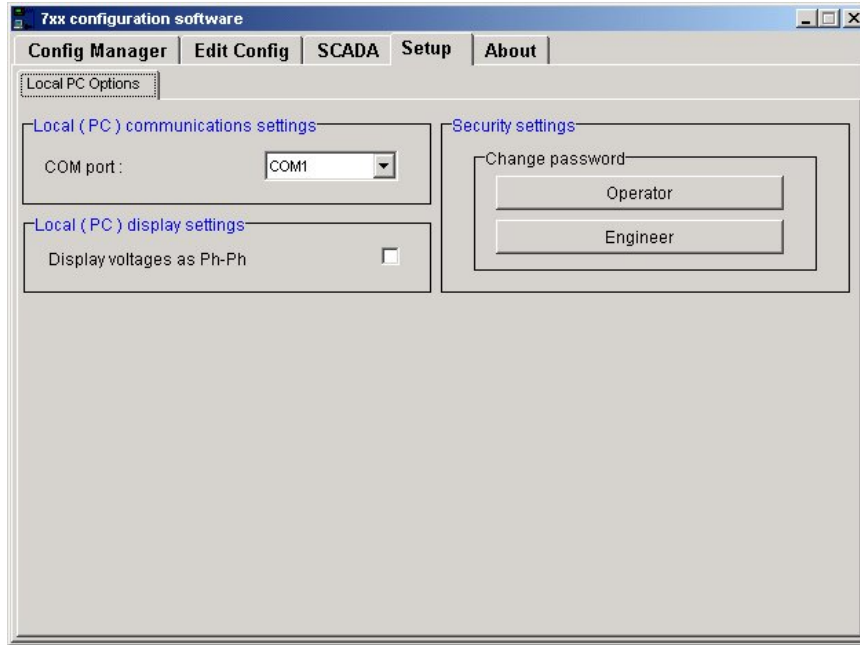

💡 **HINT!:- The instrumentation page also contains diagnostic information. This contains the state of the module's inputs and outputs. This information can be used to help the commissioning engineer and/or system designer to test and fault find wiring external to the controller.**

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6   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:

Set-up	Function
Communications Settings	**Change COM Port -** 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 set-up 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 Remote instrumentation tab, if no 'Heartbeat' is displayed this indicates that a communications link has not been established. Check the COM port setting as described above.**
Local (PC) display settings	**Display 3ph 4wire voltage settings as ph-ph** ☐ = On the Edit 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 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 SCADA 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 SCADA display in all password levels. If these are operated, *(by using the mouse and clicking on them)* then the appropriate command is sent via the P810 interface to the 7xx module.

 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 configuration 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 <u>IS</u> 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 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.**

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 <u>IS</u> 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: