COMPLEX SOLUTIONS
MADE SIMPLE

DEEP SEA ELECTRONICS

DSEEXTRA®

DSE2510 / DSE2520 Display Module

Document Number 057-105

Author : Anthony Manton

Deep Sea Electronics Plc
Highfield House
Hunmanby
North Yorkshire
YO14 0PH
ENGLAND

Sales Tel: +44 (0) 1723 890099
Sales Fax: +44 (0) 1723 893303

E-mail : sales@Deepseaplc.com
Website : www.deepseaplc.com

DSE2510 / DSE2520 Display Module Operator Manual

Amendments since last publication

Amd. No.	Comments

Typeface : The typeface used in this document is *Arial*. Care should be taken not to mistake the upper case letter I with the numeral 1. The numeral 1 has a top serif to avoid this confusion.

1 BIBLIOGRAPHY

This document refers to and is reffered to by the following DSE publications which can be obtained from the DSE website www.deepseaplc.com

This document refers to and is referred to by the following DSE publications which can be obtained from the DSE website www.deepseaplc.com

1.1 INSTALLATION INSTRUCTIONS

Installation instructions are supplied with the product in the box and are intended as a 'quick start' guide only.

DSE PART	DESCRIPTION
053-028	DSE7310 installation instructions
053-029	DSE7320 installation instructions

1.2 MANUALS

This document contains only a subset of the operator instructions for the system. For full operating instructions, consult the relevant documents below.

DSE PART	DESCRIPTION
057-004	Electronic Engines and DSE wiring manual
057-074	DSE7000 Series operator manual
057-077	DSE7000 Series configuration software manual

2 INTRODUCTION

This document details the installation and operation requirements of the DSE2510 and DSE2520 Display modules, part of the DSEExtra® range of ancilliary devices.
The manual forms part of the product and should be kept for the entire life of the product. If the product is passed or supplied to another party, ensure that this document is passed to them for reference purposes.
This is not a *controlled document.* You will not be automatically informed of updates. Any future updates of this document will be included to the DSE website at www.deepseaplc.com

DSE2500 Display Module is used in conjunction with supported DSE controllers to provide up to three displays. Configuration is made in the configuration of the host controller, not the display module itself.

For further details on configuring the 'host controller' you are referred to the relevant configuration software manual (refer to the section entitled *Bibliography* elsewhere in this document).

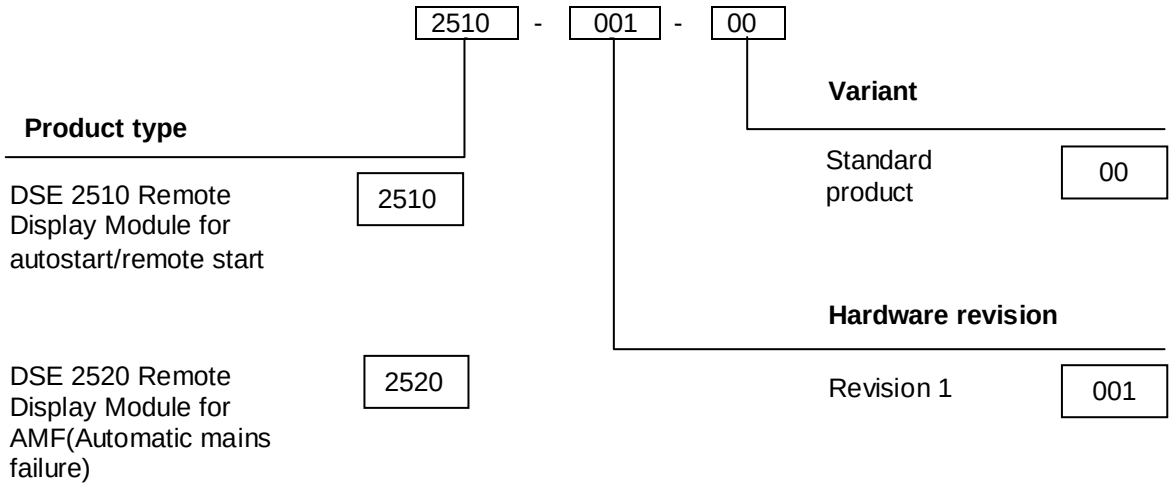
The DSE2500 series display operates independently of the host controller. This means that the display shows different information than the screen of the host controller, depending upon what buttons have been pressed. For instance, the host controller may be showing the status display, while the display shows engine instruments as the operator has pressed the buttons to navigate to this display.

When multiple DSE2500 displays are connected to the host controller, each will display the same information. For instance, selecting engine instruments on one DSE2500 will also display engine instruments on any other DSE2500 connected to the host controller.

Monitoring of the communications link to the host controller is provided to allow an alarm to be generated in the case of a communications link failure. This alarm is configurable in the host controller.

3 SPECIFICATIONS

3.1 PART NUMBERING



At the time of this document production, there are no variants of this product and there have been no revisions of the module hardware.

3.2 POWER SUPPLY

Minimum supply voltage	8V continuous
Cranking dropouts	Able to survive 0V for 50mS providing the supply was at least 10V before the dropout and recovers to 5V afterwards. This is more than sufficient to allow the module to operate during engine cranking where the battery supply often falls as low as 4V (on a 12V system!) This is achieved without the need for internal batteries or other external requirements.
Maximum supply voltage	35V continuous (60V protection for surges)
Reverse polarity protection	-35V continuous
Maximum operating current	160mA at 24V 340mA at 12V

3.3 TERMINAL SPECIFICATION

Connection type	Two part connector. • Male part fitted to module • Female part supplied in module packing case - Screw terminal, rising clamp, no internal spring.	 Example showing cable entry and screw terminals of a 10 way connector
Minimum cable size	0.5mm² (AWG 24)	
Maximum cable size	2.5mm² (AWG 10)	

NOTE : For purchasing additional connector plugs from DSE, please see the section entitled *Maintenance, Spares, Repair and Servicing* elsewhere in this document.

3.4 RS485

NOTE : The DSE2500 Display operates using the Host Controller's DSENet® connected to the RS485 port. Ensure your module is compatible with DSENet interface. At the time of writing this manual, only the DSE7300 series supports DSENet.

DSEnet® is the interconnection cable between the host controller and the expansion module(s) and must not be connect to any device other than DSE equipment designed for connection to the DSEnet®.

Cable type	Two core screened twisted pair
Cable characteristic impedance	120Ω
Recommended cable	Belden 9841 Belden 9271
Maximum cable length	1000m (1km) when using Belden 9841 or direct equivalent. 500m (0.5km) when using Belden 9271 or direct equivalent.
DSEnet® topology	Bus with no stubs (spurs)
DSEnet® termination	120Ω. Fitted internally to host controller. Must be fitted externally to the 'last' expansion module by the customer .
Maximum expansion modules	Refer to host controller documentation

NOTE : As a termination resistor is internally fitted to the host controller, the host controller must be the 'first' unit on the DSEnet®. A termination resistor MUST be fitted to the 'last' unit on the DSEnet®. For connection details, you are referred to the section entitled *'typical wiring diagram'* elsewhere in this document.

3.5 OUTPUTS C & D

Type	Voltage free relays, factory set to "audible alarm"
Rating	8A resistive @ 250 V AC

NOTE : Outputs A & B are not fitted to the DSE2500 series module.

3.6 SOUNDER

The display features an internal sounder to draw attention to warning, shutdown and electrical trip alarms. This operates at the same time as the host controller's internal sounder and can be muted locally. Operation of the mute function is subject to the configuration of the host controller and may be either 'follow main unit' or local.
When 'follow main unit' is selected, pressing any mute button in the system on the host controller or on any other DSENet® module configured to "follow main unit" will silence the host controller and all modules configured to 'follow main unit'.
When 'follow main unit' is not selected, the display mute button operates independant of any other DSENet® or host controller mute button.

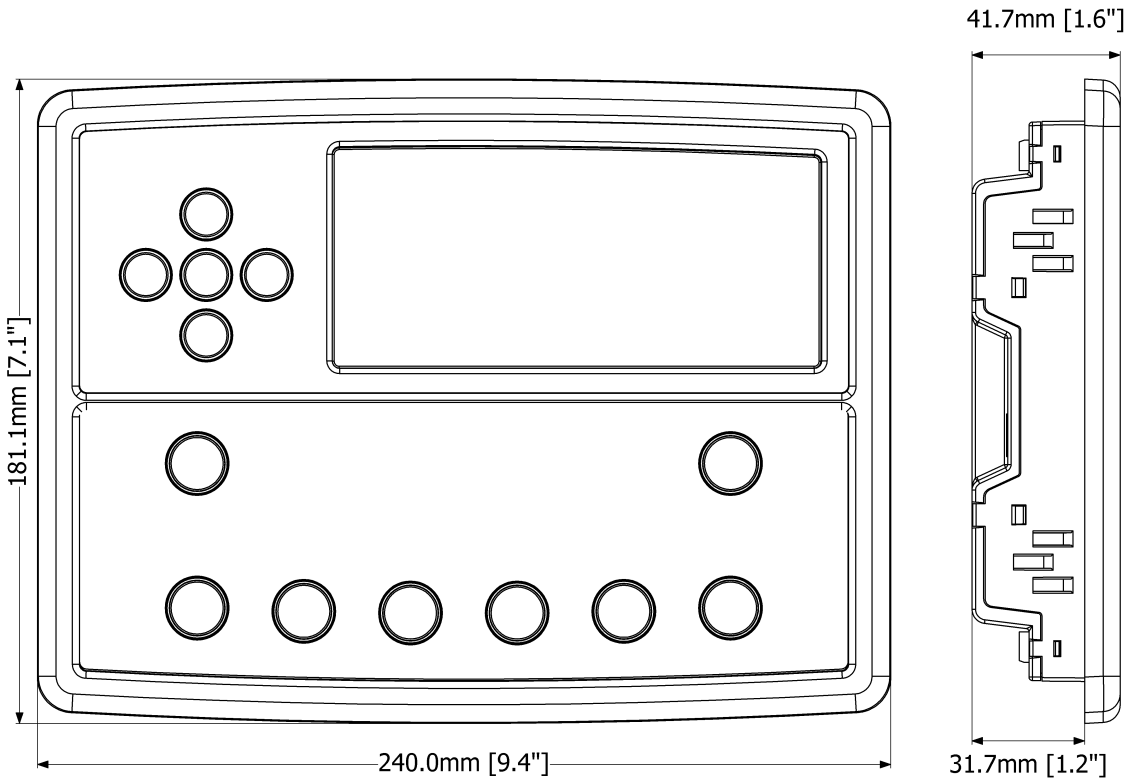
Sounder level	84db @ 1m

3.7 DIMENSIONS AND MOUNTING

DIMENSIONS
240.0mm x 181.1mm x 41.7mm (9.4” x 7.1” x 1.6”)

PANEL CUTOUT
220mm x 160mm (8.7” x 6.3”)

WEIGHT
0.7kg (1.4lb)

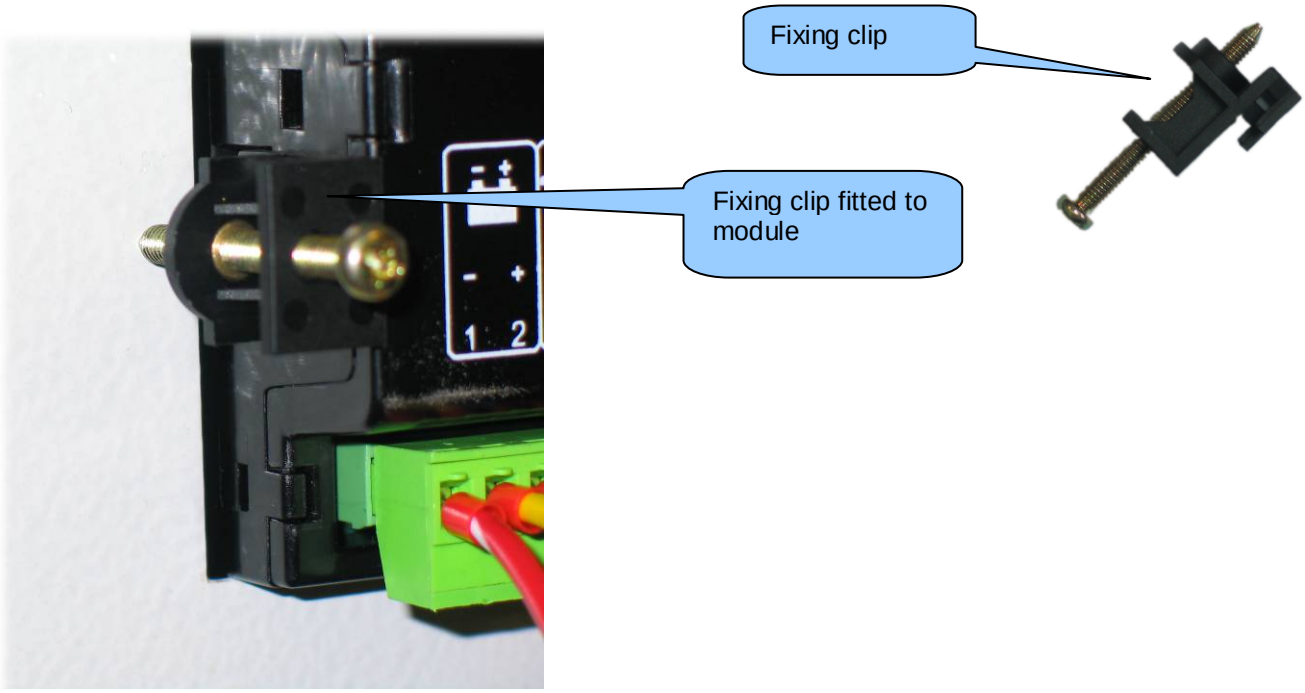


3.8 FIXING CLIPS

Supplied fixing clips hold the module into the panel fascia.

Withdraw the fixing clip screw (turn anticlockwise) until only the pointed end is protruding from the clip.

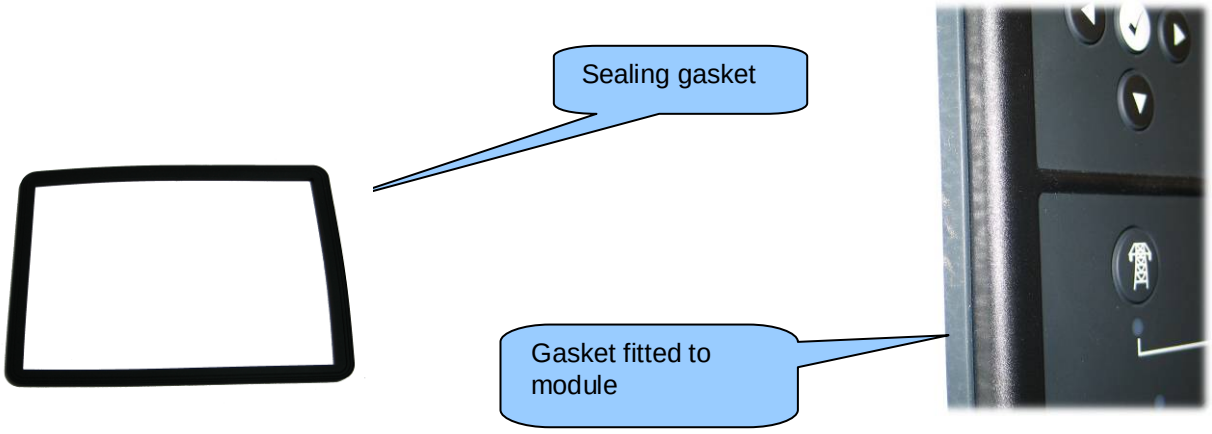
- Insert the three 'prongs' of the fixing clip into the slots in the side of the DSE2500 series module case.
- Pull the fixing clip backwards (towards the back of the module) ensuring all three prongs of the clip are inside their allotted slots.
- Turn the fixing clip screws clockwise until they make contact with the panel fascia.
- Turn the screws a little more to secure the module into the panel fascia. Take care not to over tighten the fixing clip screws.



NOTE:- In conditions of excessive vibration, mount the module on suitable anti-vibration mountings.

3.9 SILICON SEALING GASKET

The supplied silicon gasket provides improved sealing between the DSE2500 series module and the panel fascia.
The gasket is fitted to the module before installation into the panel fascia.
Take care to ensure the gasket is correctly fitted to the module to maintain the integrity of the seal.



3.10 APPLICABLE STANDARDS

BS 4884-1	This document conforms to BS4884-1 1992 Specification for presentation of essential information.
BS 4884-2	This document conforms to BS4884-2 1993 Guide to content
BS 4884-3	This document conforms to BS4884-3 1993 Guide to presentation
BS EN 60068-2-1 (Minimum temperature)	-30°C (-22°F)
BS EN 60068-2-2 (Maximum temperature)	+70°C (158°F)
BS EN 60950	Safety of information technology equipment, including electrical business equipment
BS EN 61000-6-2	EMC Generic Immunity Standard (Industrial)
BS EN 61000-6-4	EMC Generic Emission Standard (Industrial)
BS EN 60529 (Degrees of protection provided by enclosures) (see overleaf)	IP65 (front of module when installed into the control panel with the supplied sealing gasket) IP42 (front of module when installed into the control panel WITHOUT being sealed to the panel)
UL508 NEMA rating (Approximate) (see overleaf)	12 (Front of module when installed into the control panel with the supplied sealing gasket). 2 (Front of module when installed into the control panel WITHOUT being sealed to the panel)

In line with our policy of continual development, Deep Sea Electronics, reserve the right to change specification without notice.

3.10.1 ENCLOSURE CLASSIFICATIONS

3.10.1.1 IP CLASSIFICATIONS

DSE2500 series specification under BS EN 60529 Degrees of protection provided by enclosures

IP65 (Front of module when module is installed into the control panel with the optional sealing gasket).
IP42 (front of module when module is installed into the control panel WITHOUT being sealed to the panel)

First Digit Protection against contact and ingress of solid objects		Second Digit Protection against ingress of water	
0	No protection	0	No protection
1	Protected against ingress solid objects with a diameter of more than 50 mm. No protection against deliberate access, e.g. with a hand, but large surfaces of the body are prevented from approach.	1	Protection against dripping water falling vertically. No harmful effect must be produced (vertically falling drops).
2	Protected against penetration by solid objects with a diameter of more than 12 mm. Fingers or similar objects prevented from approach.	2	Protection against dripping water falling vertically. There must be no harmful effect when the equipment (enclosure) is tilted at an angle up to 15° from its normal position (drops falling at an angle).
3	Protected against ingress of solid objects with a diameter of more than 2.5 mm. Tools, wires etc. with a thickness of more than 2.5 mm are prevented from approach.	3	Protection against water falling at any angle up to 60° from the vertical. There must be no harmful effect (spray water).
4	Protected against ingress of solid objects with a diameter of more than 1 mm. Tools, wires etc. with a thickness of more than 1 mm are prevented from approach.	4	Protection against water splashed against the equipment (enclosure) from any direction. There must be no harmful effect (splashing water).
5	Protected against harmful dust deposits. Ingress of dust is not totally prevented but the dust must not enter in sufficient quantity to interface with satisfactory operation of the equipment. Complete protection against contact.	5	Protection against water projected from a nozzle against the equipment (enclosure) from any direction. There must be no harmful effect (water jet).
6	Protection against ingress of dust (dust tight). Complete protection against contact.	6	Protection against heavy seas or powerful water jets. Water must not enter the equipment (enclosure) in harmful quantities (splashing over).

3.10.1.2 NEMA CLASSIFICATIONS

DSE2500 series NEMA Rating (Approximate)

12 (Front of module when module is installed into the control panel with the optional sealing gasket).
2 (front of module when module is installed into the control panel WITHOUT being sealed to the panel)

NOTE: - There is no direct equivalence between IP / NEMA ratings. IP figures shown are approximate only.

1 IP30	Provides a degree of protection against contact with the enclosure equipment and against a limited amount of falling dirt.
2 IP31	Provides a degree of protection against limited amounts of falling water and dirt.
3 IP64	Provides a degree of protection against windblown dust, rain and sleet; undamaged by the formation of ice on the enclosure.
3R IP32	Provides a degree of protection against rain and sleet:; undamaged by the formation of ice on the enclosure.
4 (X) IP66	Provides a degree of protection against splashing water, windblown dust and rain, hose directed water; undamaged by the formation of ice on the enclosure. (Resist corrosion).
12/12K **IP65**	Provides a degree of protection against dust, falling dirt and dripping non corrosive liquids.
13 IP65	Provides a degree of protection against dust and spraying of water, oil and non corrosive coolants.

4 INSTALLATION

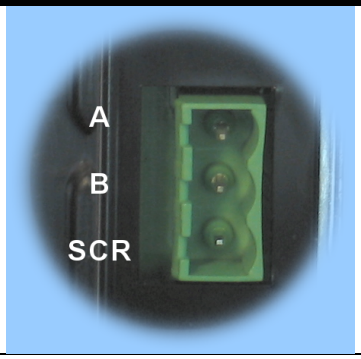
4.1 USER CONNECTIONS

4.1.1 DC SUPPLY

Icon	PIN No	DESCRIPTION	CABLE SIZE	NOTES
	1	DC Plant Supply Input (Negative)	2.5mm² AWG 13	
	2	DC Plant Supply Input (Positive)	2.5 mm² AWG 13	(Recommended Maximum Fuse 2A anti-surge)

NOTE:- Terminal 3 is not fitted to the DSE2500 series module

4.1.2 RS485

	PIN No	DESCRIPTION	CABLE SIZE	NOTES
	A	+	0.5mm² AWG 20	Use only 120Ω RS485 approved cable
	B	-	0.5mm² AWG 20	Use only 120Ω RS485 approved cable
	30	SCR	0.5mm² AWG 20	Use only 120Ω RS485 approved cable

4.1.3 OUTPUTS

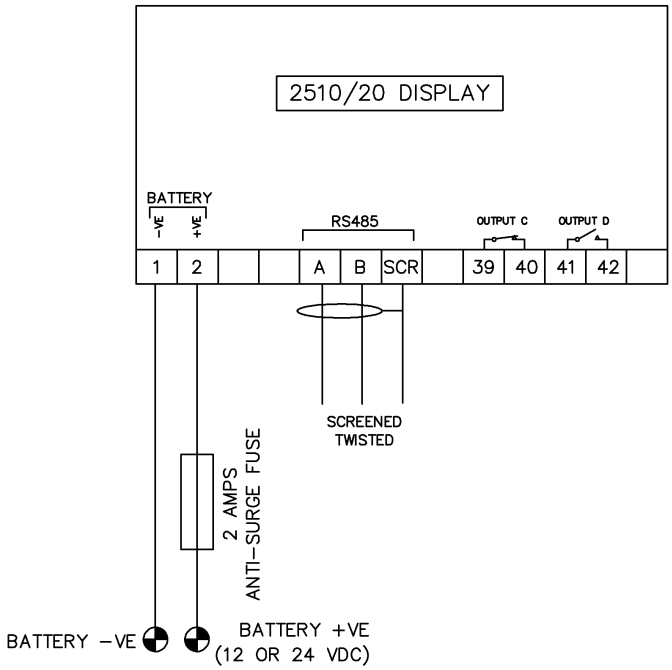
Icon	PIN No	DESCRIPTION	CABLE SIZE	NOTES
	39	Output relay C	1.0mm AWG 18	Factory configured to Audible Alarm (Recommend 10A fuse)
	40	Output relay C	1.0mm AWG 18	Factory configured to Audible Alarm
	41	Output relay D	1.0mm AWG 18	Factory configured to Audible Alarm (Recommend 10A fuse)
	42	Output relay D	1.0mm AWG 18	Factory configured to Audible Alarm

NOTE:- Terminals 3 to 38 are not fitted to the DSE2500 series controller

NOTE:- Terminals 43 to 69 are not fitted to the DSE2500 series controller

NOTE:- Screened 120Ω impedance cable specified for use with RS485 must be used for the RS485 to DSENET® connections.
DSE stock and supply Belden cable 9841 which is a high quality 120Ω impedance cable suitable for RS485 and DSENET® use (DSE part number 016-030)

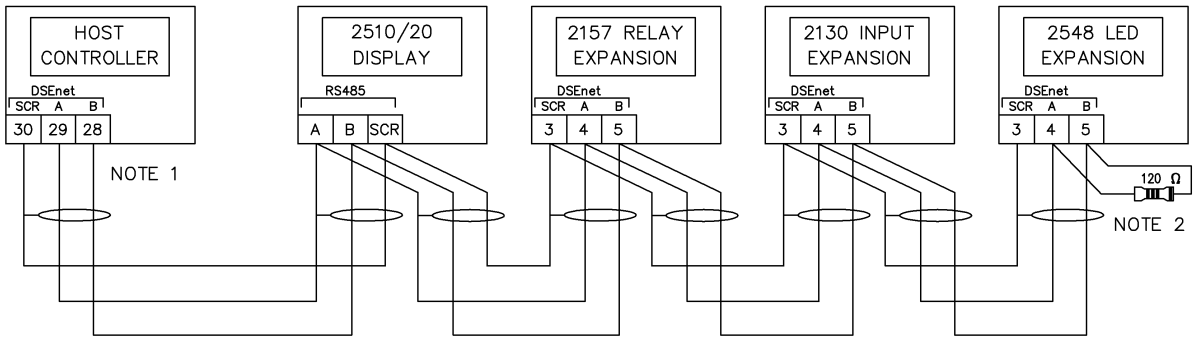
4.2 TYPICAL CONNECTION DIAGRAMS



4.2.1 MULTIPLE EXPANSION MODULES

This diagram shows how the DSE2510 / DSE2520 Display Module can be installed as part of a larger scheme of expansion modules.

NOTE : The connections from one module to another MUST be in a daisy chain fashion as shown. The cable must run IN to the terminals, then OUT again. Spurs should be avoided where possible. If this is not possible, they should be no longer than one metre (one yard). Failure to observe this may lead to intermittent or broken communications link.



NOTE 1

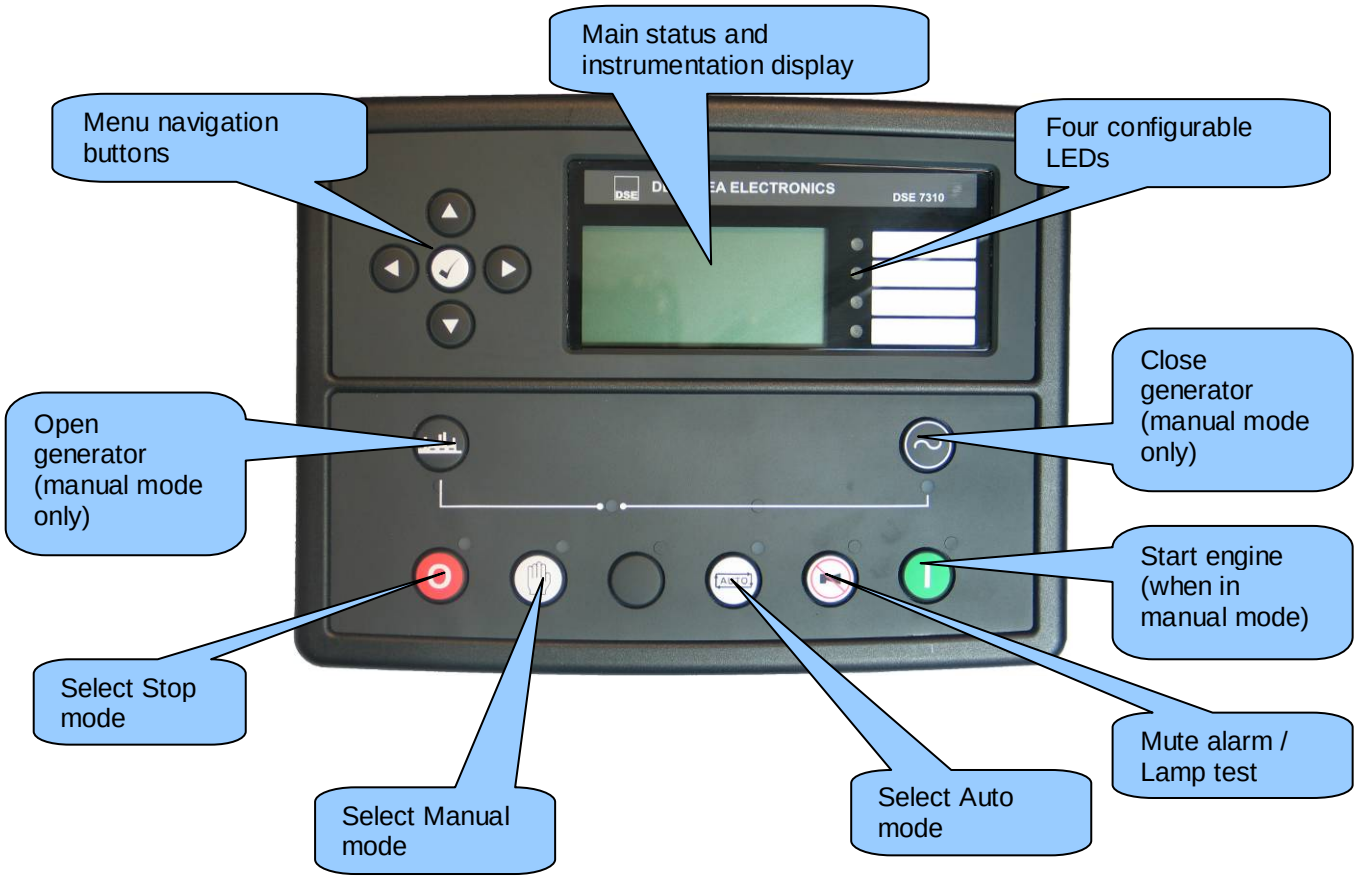
AS A TERMINATING RESISTOR IS INTERNALLY FITTED TO THE HOST CONTROLLER, THE HOST CONTROLLER MUST BE THE FIRST UNIT ON THE DSEnet

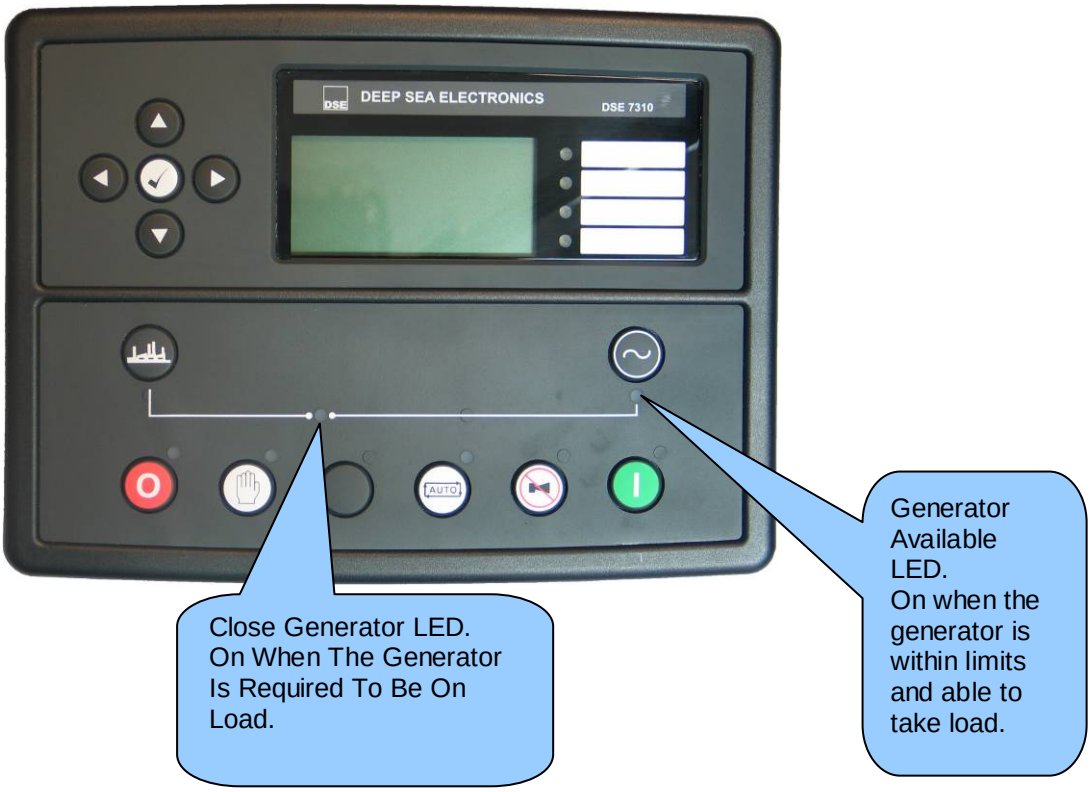
NOTE 2

A 120 OHM TERMINATION RESISTOR MUST BE FITTED TO THE LAST UNIT ON THE DSEnet

5 CONTROLS AND INDICATIONS

5.1 DSE2510 DISPLAY FOR REMOTE START/AUTOSTART



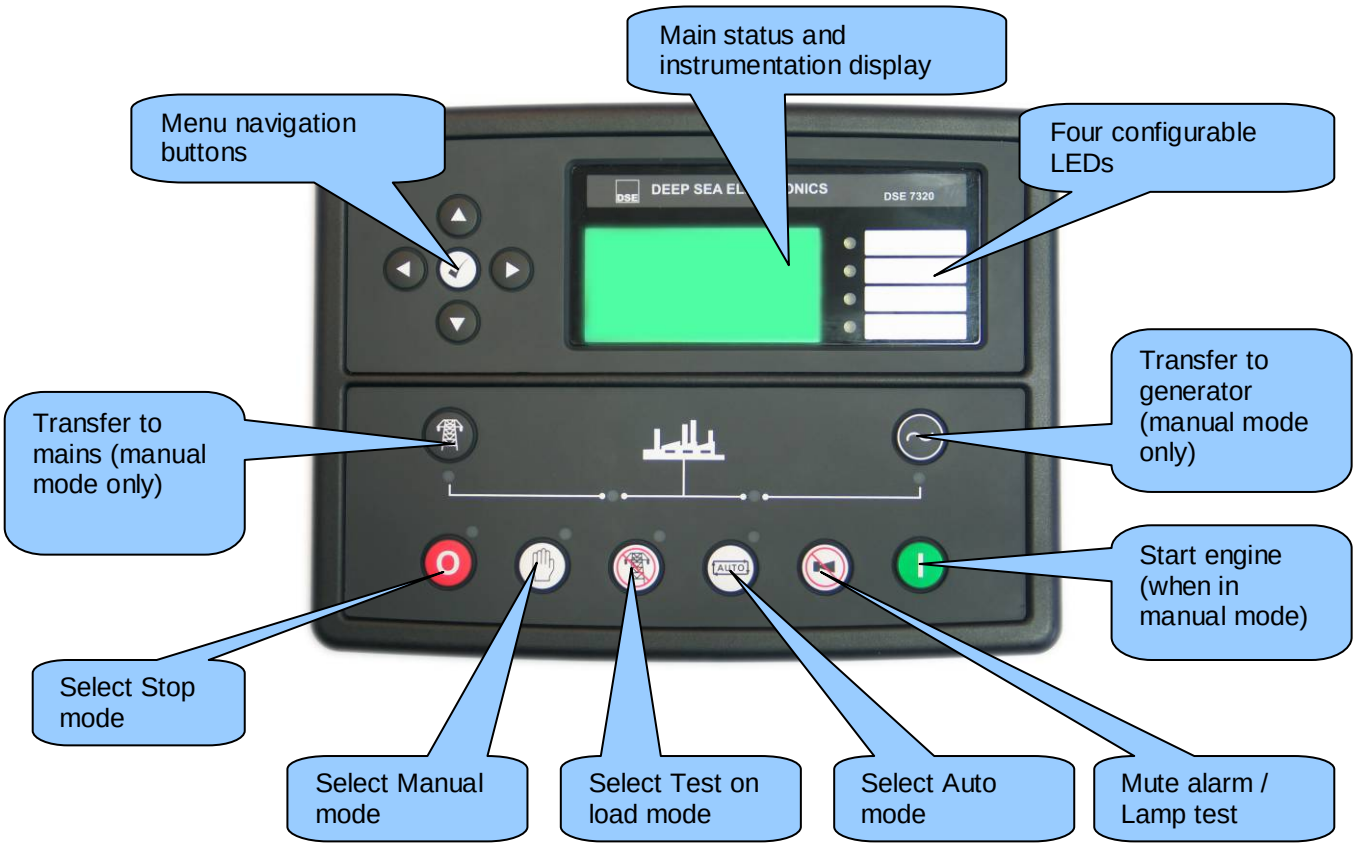


NOTE:- "Generator on load" LED has two modes of operation depending upon the configuration of the host controllers digital inputs.

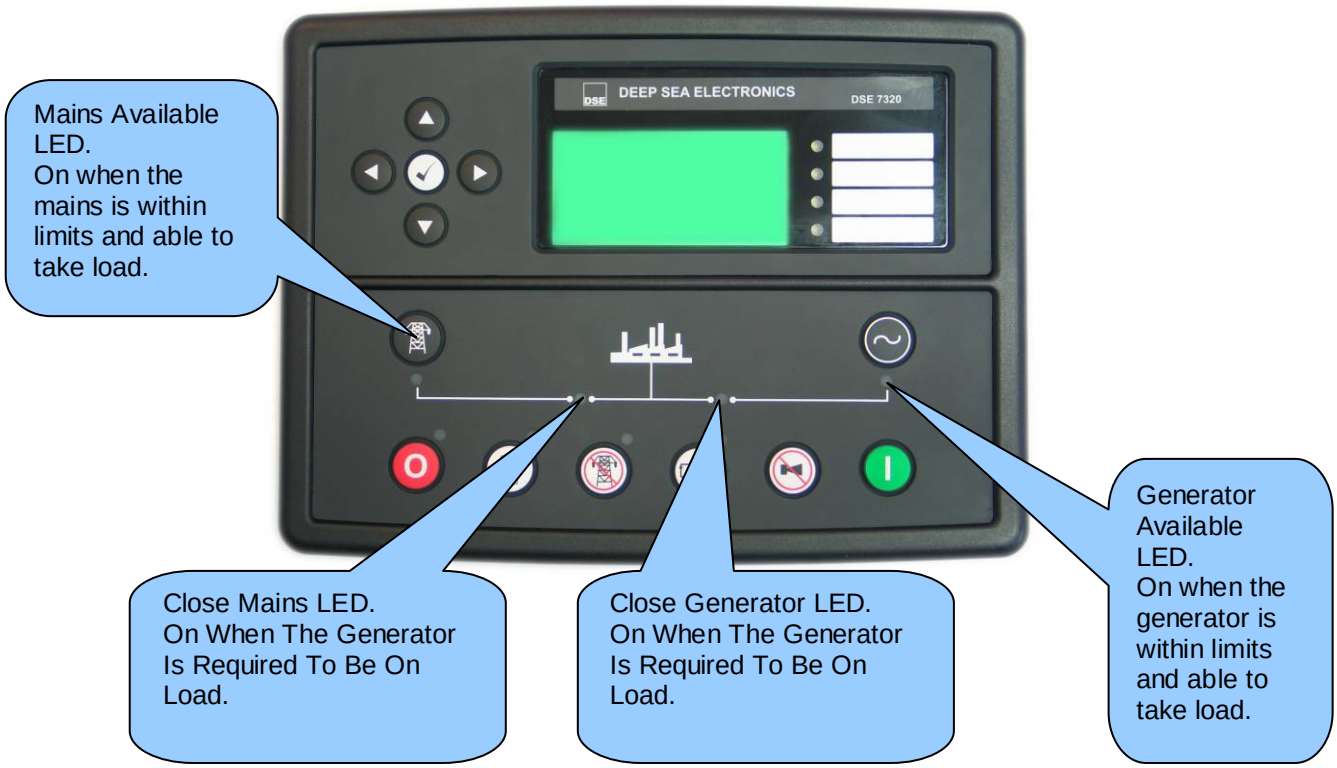
1) **Digital input configured for "Generator closed auxiliary" – The LED illuminates when the generator closed auxiliary input is active – The LED shows the state of the auxiliary contact.**
2) **There is NO input configured for "Generator closed auxiliary" (factory default setting) – The LED illuminates when the host gives the loading signal to the generator – The LED shows the state of the host's loading request.**

5.2 DSE2520

NOTE: This sections contains only a subset of the information. The relevant host controller operator manual contains full detailed description of the system's controls, indications and operation.



Continued overleaf….



NOTE:- "Generator on load" LED has two modes of operation depending upon the configuration of the host controllers digital inputs.

3) **Digital input configured for "Generator closed auxiliary" – The LED illuminates when the generator closed auxiliary input is active – The LED shows the state of the auxiliary contact.**
4) **There is NO input configured for "Generator closed auxiliary" (factory default setting) – The LED illuminates when the host controller gives the loading signal to the generator – The LED shows the state of the host's loading request.**

NOTE:- "Mains on load" LED has two modes of operation depending upon the configuration of the host controllers digital inputs.

5) **Digital input configured for "Mains closed auxiliary" – The LED illuminates when the mains closed auxiliary input is active – The LED shows the state of the auxiliary contact.**
6) **There is NO input configured for "Mains closed auxiliary" (factory default setting) – The LED illuminates when the host gives the loading signal to the mains – The LED shows the state of the hosts loading request.**

5.4 ID SELECTION

The Display's 'running editor' is used to select the 'Identification' of the display module as the host controller is capable of giving instructions to a number of expansion modules at the same time. Consult the relevant host module's operating instructions for further details on number of supported expansion units (refer to the section entitled *Bibliography* elsewhere in this document).

NOTE : The ID must be set to be a unique number, different from the ID of any other Display connected on the DSEnet®. The ID of the DSE2500 will not interfere with the ID of any other *type* of expansion module. For instance it's OK to have a DSE2500 with ID1 and a DSE2157 with ID1. As the two modules are different type

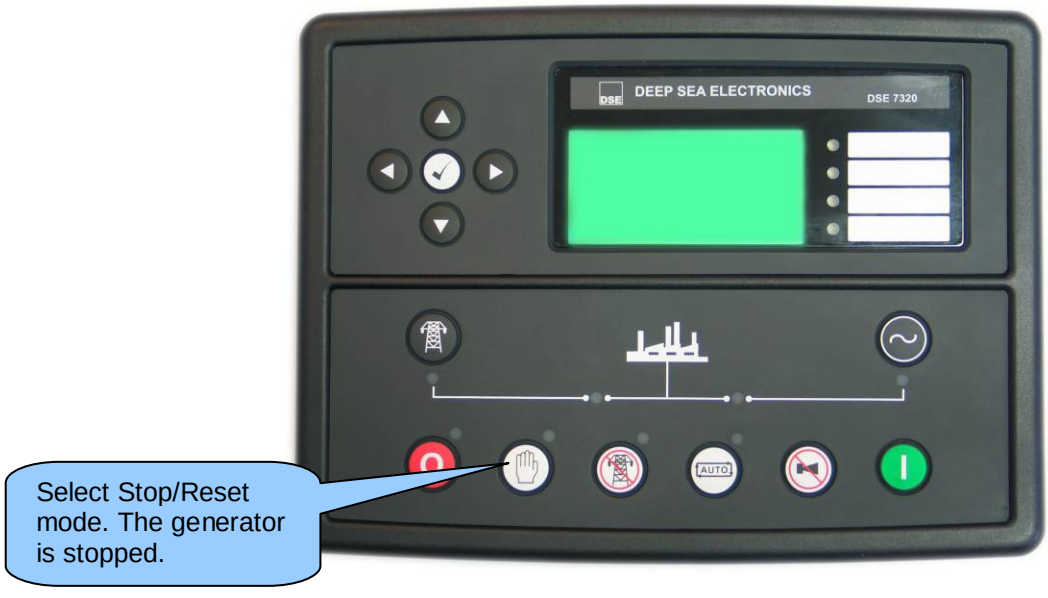
5.5 QUICKSTART GUIDE

This section provides a quick start guide to the module's operation.

5.5.1 STARTING THE ENGINE

NOTE:- For further details, see the section entitled 'OPERATION' elsewhere in this manual.

5.5.2 STOPPING THE ENGINE

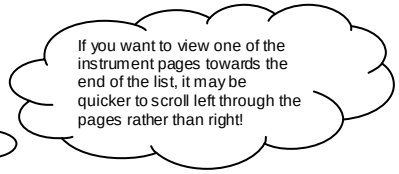


NOTE:- For further details, see the section entitled 'OPERATION' elsewhere in this manual.

5.6 VIEWING THE INSTRUMENT PAGES

NOTE: This sections contains only a subset of the information. The relevant host controller operator manual contains full detailed description of the system's controls, indications and operation.

It is possible to scroll to display the different pages of information by repeatedly operating the next / previous page buttons 



Example

Status  Engine  Generator 

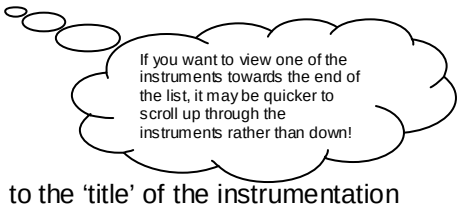
And so on until the last page is reached. A Further press of the scroll right button, returns the display to the Status page.

The complete order and contents of each information page are given in the following sections

Once selected the page will remain on the LCD display until the user selects a different page, or after an extended period of inactivity (*LCD Page Timer*), the module will revert to the status display.

If no buttons are pressed upon entering an instrumentation page, the instruments will be displayed automatically subject to the setting of the *LCD Scroll Timer*.

Alternatively, to scroll manually through all instruments on the currently selected page, press the scroll  buttons. The 'autoscroll' is disabled.



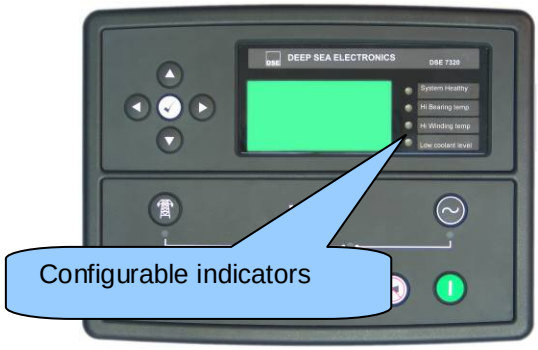
To re-enable 'autoscroll' press the scroll  buttons to scroll to the 'title' of the instrumentation page (ie Engine). A short time later (the duration of the *LCD Scroll Timer*) the instrumentation display will begin to autoscroll.

When scrolling manually, the display will automatically return to the Status page if no buttons are pressed for the duration of the configurable *LCD Page Timer*.

If an alarm becomes active while viewing the status page, the display shows the Alarms page to draw the operator's attention to the alarm condition.

5.7 CONFIGURABLE INDICATORS

The DSE2500 display LEDs mimic the configurable LED indicators of the host controller.



5.8 CONTROLS

Stop / Reset This button places the module into its **Stop/Reset** mode. This will clear any alarm conditions for which the triggering criteria have been removed. If the engine is running and the module is in Stop mode, the module will automatically instruct the changeover device to unload the generator *('**Close Generator**' becomes inactive (if used))*. The fuel supply de-energises and the engine comes to a standstill. Should a **remote start signal** be present while operating in this mode, a remote start will not occur.	
Manual This mode allows manual control of the generator functions. Once in **Manual mode** the module will respond to the start button, start the engine, and run off load. If the engine is running off-load in the **Manual mode** and a **remote start signal** becomes present, the module will automatically instruct the changeover device to place the generator on load *('**Close Generator**' becomes active (if used))*. Upon removal of the **remote start signal**, the generator remains on load until either selection of the **'STOP/RESET'** or **'AUTO'** modes. *For further details, please see the more detailed description of 'Manual operation' elsewhere in this manual.*	
Auto This button places the module into its **'Automatic'** mode. This mode allows the module to control the function of the generator automatically. The module will monitor the *remote start* input and mains supply status and once a start request is made, the set will be automatically started and placed on load. Upon removal of the starting signal, the module will automatically transfer the load from the generator and shut the set down observing the *stop delay* timer and *cooling* timer as necessary. The module will then await the next start event. *For further details, please see the more detailed description of 'Auto operation' elsewhere in this manual.*	
Test (DSE2520 only) This button places the module into its **'Test'** mode. This allows an on load test of the generator. Once in **Test mode** the module will respond to the start button, start the engine, and run on load. *For further details, please see the more detailed description of 'Test operation' elsewhere in this manual.*	
Start This button is only active in STOP/RESET or MANUAL mode. Pressing this button in manual or test mode will start the engine and run off load (manual) or on load (test). Pressing this button in STOP/RESET mode will turn on the CAN engine ECU (when correctly configured and fitted to a compatible engine ECU)	
Mute / Lamp Test This button silences the audible alarm if it is sounding and illuminates all of the LEDs as a lamp test feature/ When correctly configured and fitted to a compatible engine ECU, pressing this button in STOP/RESET mode after pressing the START button (to power the ECU) will cancel any "passive" alarms on the engine ECU.	

Transfer to generator Allows the operator to transfer the load to the generator (when in Manual mode only)	
Open generator (DSE2510 only) Allows the operator to open the generator (when in Manual mode only)	
Transfer to mains (DSE2520 only) Allows the operator to transfer the load to the mains (when in Manual mode only)	
Menu navigation Used for navigating the instrumentation, event log and configuration screens. For further details, please see the more detailed description of these items elsewhere in this manual.	

6 OPERATION

NOTE: This section contains only a subset of the total information. The relevant host controller operator manual contains full detailed description of the system's controls, indications and operation.

Remember that if you have purchased a completed generator set or control panel from your supplier, the module's configuration will probably have been changed by them to suit their particular requirements.

Always refer to your configuration source for the exact sequences and timers observed by any particular module in the field.

The DSE2500 series display operates independently of the host controller. This means that the display shows different information than the screen of the host controller, depending upon what buttons have been pressed. For instance, the host controller may be showing the status display, while the DSE2500 display shows engine instruments as the operator has pressed the buttons to navigate to this display.

When multiple DSE2500 displays are connected to the host controller, each will display the same information. For instance, selecting engine instruments on one DSE2500 will also display engine instruments on any other DSE2500 connected to the host controller.

As the DSE2500 series displays information from the host controller, you are referred to the host controller operator manual for detail operation of the system.

6.1 STOP MODE

STOP mode is activated by pressing the button.

In STOP mode, the module will remove the generator from load (if necessary) before stopping the engine if it is already running.

Any latched alarms that have been cleared will be reset when STOP mode is entered.

The engine will not be started when in STOP mode. If remote start signals are given, the input is ignored until AUTO mode is entered.

6.1.1 ECU OVERRIDE

NOTE:- ECU Override function is only applicable when the host controller is connected to a compatible electronic engine ECU (CAN or Modbus engine)

As the ECU is usually unpowered when the engine is not running, it must be turned on manually as follows :

- Select STOP mode on the DSE controller.
- Press and hold the START button to power the ECU. As the controller is in STOP mode, the engine will not be started.
- Continue to hold the start button for as long as you need the ECU to be powered.
- The ECU will remain powered until a few seconds after the START button is released.

6.2 AUTOMATIC MODE

Activate auto mode by pressing the pushbutton. An LED indicator beside the button confirms this action.

Auto mode will allow the generator to operate fully automatically, starting and stopping as required with no user intervention.

6.3 MANUAL MODE

Activate Manual mode be pressing the pushbutton. An LED indicator beside the button confirms this action.

Manual mode allows the operator to start and stop the set manually, and if required change the state of the load switching devices.

6.4 TEST MODE

NOTE:- Test Mode is only applicable to DSE7320 controllers.

Activate test mode be pressing the pushbutton. An LED indicator beside the button confirms this action.

Test mode will start the set and transfer the load to the generator to provide a ***Test on load*** function.

7 PROTECTIONS

NOTE: This section contains only a subset of the total information. The relevant host controller operator manual contains full detailed description of the system's controls, indications and operation.

When an alarm is present, the Audible Alarm will sound and the Common alarm LED if configured will illuminate.

The audible alarm can be silenced by pressing the *Mute button* 

In the event of an alarm the LCD will jump to the alarms page, and scroll through all active warnings, shutdowns and electrical trips.

7.1 PROTECTIONS DISABLED

User configuration of the DSE7300 series controller (version 4 and above) is possible to prevent Shutdown / Electrical Trip alarms from stopping the engine.
Under such conditions, *Protections Disabled* will appear on the module display to inform the operator of this status.

7.2 INDICATIONS

Indications are non-critical and are often status conditions. They do not appear on the LCD of the module as a text message. However an output or LED indicator can be configured to draw the operators attention to the event.

7.3 WARNINGS

Warnings are non-critical alarm conditions and do not affect the operation of the generator system, they serve to draw the operators attention to an undesirable condition.

By default, warning alarms are self-resetting when the fault condition is removed. However DSE7300 series can be set to 'all warnings are latched' to make warning alarms to latch until reset manually.

If the module is configured for **CAN** or **Modbus ECU** and receives an "error" message from the engine control unit, 'Can ECU Warning" is shown on the module's display and a warning alarm is generated.

7.4 SHUTDOWNS

NOTE:- Shutdown and Electrical Trip alarms can be disabled by user configuration. See the section entitled *Protections Disabled* elsewhere in this document.

Shutdowns are latching alarms and stop the Generator. Clear the alarm and remove the fault then press Stop/Reset to reset the module.

NOTE:- The alarm condition must be rectified before a reset will take place. If the alarm condition remains, it will not be possible to reset the unit (The exception to this is the Low Oil Pressure alarm and similar 'active from safety on' alarms, as the oil pressure will be low with the engine at rest).

7.5 ELECTRICAL TRIPS

NOTE:- Shutdown and Electrical Trip alarms can be disabled by user configuration. See the section entitled *Protections Disabled* elsewhere in this document.

Electrical trips are latching and stop the Generator but in a controlled manner. On initiation of the electrical trip condition the module will de-energise the **'Close Generator'** Output to remove the load from the generator. Once this has occurred the module will start the Cooling timer and allow the engine to cool off-load before shutting down the engine. The alarm must be accepted and cleared, and the fault removed to reset the module.

Electrical trips are latching alarms and stop the Generator. Remove the fault then press Stop/Reset to reset the module.

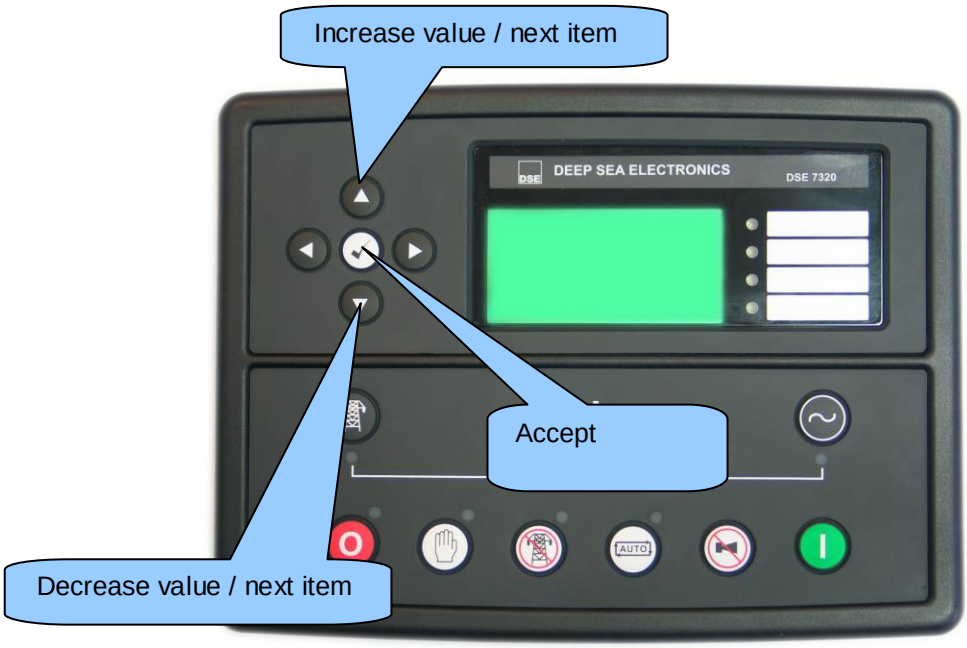
7.6 MAINTENANCE ALARM

Depending upon module configuration one or more levels of maintenance alarm may occur based upon a configurable schedule.
There are three maintenance alarms in the DSE7300 series V3 and above, and one level of maintenance alarm in prior versions.
Consult your system provider in the case of Maintenance Alarms.

7.7 FRONT PANEL CONFIGURATION

This configuration mode allows the operator limited customising of the way the display module operates. Host controller configuration is not available from the fascia of the DSE2500 series display module.

Use the module's navigation buttons to traverse the menu and make value changes to the parameters:



7.8 ACCESSING THE 'RUNNING' CONFIGURATION EDITOR

The 'running' editor can be entered while the engine is running. All protections remain active if the engine is running while the running editor is entered.

Press and hold the ✓ button to enter the running editor.

7.8.1 EDITING A PARAMETER

Enter the editor as described above.

Press the (up or down) buttons to select the parameter you wish to view/change.

To edit the parameter, press ✓ to enter edit mode. The parameter begins to flash to indicate that you are editing the value.

Press the (up or down) buttons to change the parameter to the required value.

Press ✓ to save the value. The parameter ceases flashing to indicate that it has been saved.

To exit the editor at any time, press and hold the ✓ button.

7.8.2 ADJUSTABLE PARAMETERS (RUNNING EDITOR)

Running Editor (Factory default settings are shown in bold italicised text)

Section	Parameter as shown on display	Factory Setting
DISPLAY	Contrast	***50%***
	Language	***English***
	DSENet® ID selection	***0***

8 MAINTENANCE, SPARES, REPAIR AND SERVICING

The DSE2500 Series controller is designed to be *Fit and Forget*. As such, there are no user serviceable parts within the controller.
In the case of malfunction, you should contact your original equipment supplier (OEM).

8.1 PURCHASING ADDITIONAL CONNECTOR PLUGS FROM DSE

If you require additional plugs from DSE, please contact our Sales department using the part numbers below.

7000 series terminal designation	Plug description	Part No.
1-2 	2 way 5.08mm	007-443
39-42 	4 way 7.62mm	007-171
RS485 	3 way 5.08mm	007-174

NOTE:- Terminals 3-27 are not fitted to the DSE2500 series controller

NOTE:- Terminals 31 to 38 are not fitted to the DSE2500 series controller

8.2 PURCHASING ADDITIONAL FIXING CLIPS FROM DSE

Item	Description	Part No.
	7000 series fixing clips (packet of 4)	020-294

8.3 PURCHASING ADDITIONAL SEALING GASKET FROM DSE

Item	Description	Part No.
	7000 series silicon sealing gasket	020-507

9 FAULT DIAGNOSIS

Nature of problem	Suggestion
Module appears to be 'dead'	Check polarity and size of the connected DC supply are within the specifications of the DSE2130
Host controller indicates there is a fault with communications with the DSENet® controller.	Check the connection of the DSEnet® paying particular attention to the cable type being used and the positioning of the termination resistors.

10 MAINTENANCE, SPARES, REPAIR AND SERVICING

The DSE2500 is designed to be *Fit and Forget*. As such, there are no user serviceable parts. In the case of malfunction you should contact your original equipment supplier (OEM).

11 WARRANTY

DSE provides limited warranty to the equipment purchaser at the point of sale. For full details of any applicable warranty, you are referred to your original equipment supplier (OEM).

12 DISPOSAL

12.1 WEEE (WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT)

Directive 2002/96/EC
If you use electrical and electronic equipment you must store, collect, treat, recycle and dispose of WEEE separately from your other waste.

12.2 ROHS (RESTRICTION OF HAZARDOUS SUBSTANCES

Directive 2002/95/EC:2006
To remove specified hazardous substances (Lead, Mercury, Hexavalent Chromium, Cadmium, PBB & PBDE´s)

Exemption Note: Category 9. (Monitoring & Control Instruments) as defined in Annex 1B of the WEEE directive will be exempt from the RoHS legislation. This was confirmed in the August 2005 UK´s Department of Trade and Industry RoHS REGULATIONS Guide (Para 11).

Despite this exemption DSE has been carefully removing all non RoHS compliant components from our supply chain and products.
When this is completed a Lead Free & RoHS compatible manufacturing process will be phased into DSE production.

This is a process that is almost complete and is being phased through different product groups.