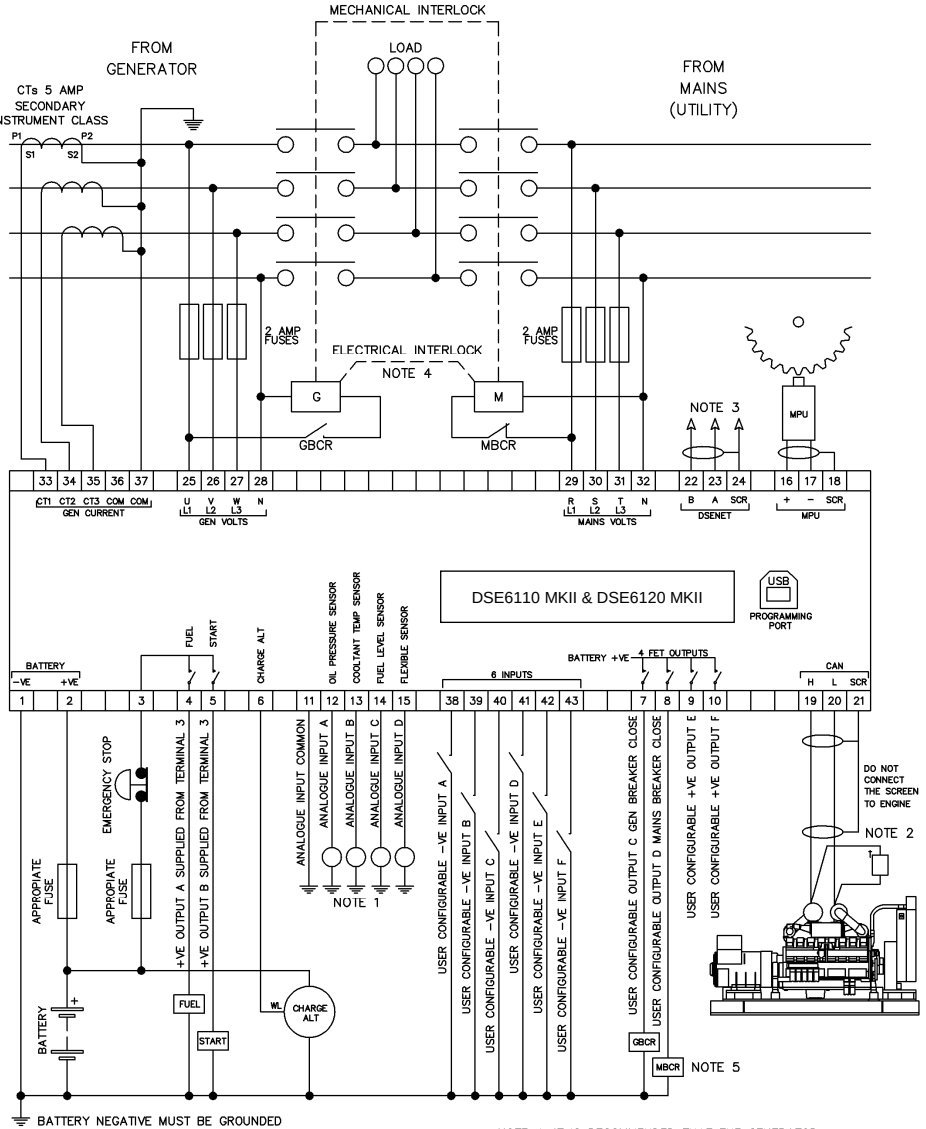
TYPICAL WIRING DIAGRAM



BATTERY NEGATIVE MUST BE GROUNDED

NOTE 1. THESE GROUND CONNECTIONS MUST BE ON THE ENGINE BLOCK, AND MUST BE TO THE SENSOR BODIES.

†NOTE 2. 120 R TERMINATING RESISTOR MAY BE REQUIRED EXTERNALLY, SEE ENGINE MANUFACTURERS LITERATURE.

NOTE 3. MUST BE FITTED AS FIRST OR LAST UNIT ON DSENET WITH NO TERMINATION RESISTOR. THE SUBSEQUENT FIRST OR LAST UNIT ON DSENET MUST BE FITTED WITH A 120 OHM TERMINATION RESISTOR ACROSS TERMINALS A AND B.

NOTE 4. IT IS RECOMMENDED THAT THE GENERATOR AND MAINS SWITCHING DEVICES ARE MECHANICALLY AND ELECTRICALLY INTERLOCKED.

NOTE 5. MAINS BREAKER CLOSED OUTPUT SHOULD BE CONFIGURED FOR DE−ENERGISE CLOSE MAINS, AND USE THE NORMALLY CLOSED CONTACTS OF MBCR

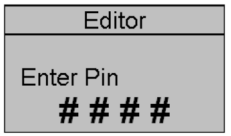
NOTE: Terminals 29, 30, 31 and 32 are not fitted to the DSE6110 MKII.

NOTE: A larger version of the Typical Wiring Diagram is available in the product's operator manual, refer to DSE Publication: *057-236 DSE6110 MKII & DSE6120 MKII Operator Manual* available from www.deepseaplc.com for more information.

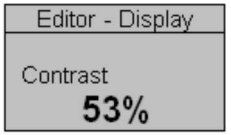
DEEP SEA ELECTRONICS

DSE6110 MKII & DSE6120 MKII Installation Instructions

ACCESSING THE MAIN CONFIGURATION EDITOR



- Ensure the engine is at rest and the module is in STOP mode by pressing the (O) (Stop/Reset) button.
- Press the (O) (Stop/Reset) and ✓ (Tick) buttons simultaneously.
- If a module security PIN has been set, the PIN number request is then shown:
- Press ✓ (Tick). The first **'#'** changes to '**0'.** Press the + (Plus) or - (Minus) buttons to adjust it to the correct value.
- Press the (Down) button when the first digit is correctly entered. The digit previously entered now shows **'#'** for security.
- Repeat this process for the other digits of the PIN number. Press the (Up) button to move back to adjust one of the previous digits.
- When the ✓ (Tick) button is pressed after editing the final PIN digit, the PIN is checked for validity. If the number is not correct, the PIN must be re-entered.
- If the PIN has been successfully entered (or the module PIN has not been enabled), the editor is displayed:



EDITING A PARAMETER

- Enter the editor as described above.
- Press and hold the (Up) or (Down) buttons to cycle to the section to view/change.
- Press the (Up) or (Down) buttons to select the parameter to view/change within the currently selected section.
- To edit the parameter, press the ✓ (Tick) button to enter edit mode. The parameter begins to flash to indicate editing.
- Press the + (Plus) or - (Minus) buttons to change the parameter to the required value.
- Press the ✓ (Tick) button to save the value. The parameter ceases flashing to indicate that it has been saved.
- To exit the editor and save the changes, press and hold the ✓ (Tick) button.
- To exit the editor and not save the changes, press and hold the (O) (Stop/Reset) button.

NOTE: If the editor is left inactive for the duration of the *LCD Page Timer,* it is automatically exited to ensure security.

NOTE: The PIN number is automatically reset when the editor is exited (manually or automatically) to ensure security.

NOTE: Comprehensive module configuration is possible using the DSE Configuration Suite PC Software, refer to DSE publication *057-224 DSE6110 MKII & DSE6120 MKII Configuraiton Suite PC Software Manual* available from www.deepseaplc.com.

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MAIN CONFIGURATION EDITOR PARAMETERS

NOTE: Depending upon module configuration, some values in the *Main & Running Configuration Editors* may not be available. For more information refer to DSE publication *057-224 DSE6110 MKII & DSE6120 MKII Configuraiton Suite PC Software Manual* available from www.deepseaplc.com

Section	Parameter As Shown On Display	Value
Display	Contrast	0 %
	Language	English
	LCD Page Delay	0 h 0 m 0 s
	LCD Scroll Delay	0 h 0 m 0 s
	Current Date and Time	Date, Month, Year, hh:mm
Engine	Oil Pressure Low Shutdown	0.00 bar
	Coolant Temperature High Pre Alarm	0 ºC
	Coolant Temperature High Shutdown	0 ºC
	Start Delay	0 h 0 m 0 s
	Pre Heat Timer	0 h 0 m 0 s
	Cranking	0 m 0 s
	Crank Rest	0 m 0 s
	Safety On Delay	0 m 0 s
	Smoke Limiting	0 m 0 s
	Smoke Limiting Off	0 m 0 s
	Warming	0 h 0 m 0 s
	Cooling	0 h 0 m 0 s
	Under Speed Shutdown	Active / Inactive
	Under Speed Shutdown	0 RPM
	Under Speed Shutdown Delay	0.0 s
	Engine Over Speed Warning	Active / Inactive
	Engine Over Speed Warning	0 RPM
	Engine Over Speed Shutdown	0 RPM
	Engine Over Speed Shutdown Delay	0.0 s
	Overspeed Overshoot	0.0s
	Fail to Stop Delay	0 m 0 s
	Battery Under Voltage Warning	Active / Inactive
	Battery Under Voltage Warning	0 V
	Battery Under Voltage Warning Delay	0 h 0 m 0 s
	Battery Over Voltage Warning	Active / Inactive
	Battery Over Voltage Warning	0 V
	Battery Over Voltage Warning Delay	0 h 0 m 0 s
	Charge Alternator Failure Warning	Active / Inactive
	Charge Alternator Failure Warning	0 V
	Charge Alternator Warning Delay	0 h 0 m 0 s
	Charge Alternator Failure Shutdown	Active / Inactive
	Charge Alternator Failure Shutdown	0.0 V
	Charge Alternator Shutdown Delay	0 h 0 m 0 s
	Low Battery Start	Active / Inactive
	Low Battery Level	0.0 V
	Low Battery Start Delay	0 h 0 m 0 s
	Low Battery Run Time	0 h 0 m 0 s
Generator	Under Voltage Shutdown	0 V
	Under Voltage Shutdown Delay	0.0 s
	Under Voltage Pre Alarm	0 V
	Loading Voltage	0 V
	Nominal Voltage	0 V
	Over Voltage Pre Alarm	0 V
	Over Voltage Shutdown	0 V
	Over Voltage Shutdown Delay	0.0 s
	Under Frequency Shutdown	0.0 Hz
	Under Frequency Shutdown Delay	0.0 s
	Under Frequency Pre Alarm	0.0 Hz
	Loading Frequency	0.0 Hz
	Nominal Frequency	0.0 Hz
	Over Frequency Pre Alarm	0.0 Hz
	Over Frequency Shutdown	0.0 Hz
	Over Frequency Shutdown Delay	0.0 s
	Over Frequency Overshoot	0.0 s
	Full Load Rating	0 A
	Delayed Over Current	Active / Inactive
	Delayed Over Current	0 %
	AC System	3 Phase, 4 Wire

MAIN CONFIGURATION EDITOR PARAMETERS (CONTINUED)

Section	Parameter As Shown On Display	Value
Generator (Continued)	CT Primary	0 A
	Full Load Rating	0 kW
	kW Overload Trip	0 %
	kW Overload Return	0 %
	Full Load Rating Delay	0 h 0 m 0 s
Mains DSE6120 MKII Only	Under Voltage Trip	0 V
	Over Voltage Trip	0 V
	Under Frequency Trip	0.0 Hz
	Over Frequency Trip	0.0 Hz
	Transient Delay	0 m 0 s
	Return Delay	0 h 0 m 0 s
	Transfer Time	0 m 0.0 s
Timers	LCD Page Delay	0 h 0 m 0 s
	LCD Scroll Delay	0 h 0 m 0 s
	Engine Pre Heat Timer	0 h 0 m 0 s
	Engine Cranking	0 m 0 s
	Engine Crank Rest	0 m 0 s
	Engine Safety On Delay	0 m 0 s
	Engine Smoke Limiting	0 m 0 s
	Engine Smoke Limiting Off	0 m 0 s
	Engine Warming	0 h 0 m 0 s
	Engine Cooling	0 h 0 m 0 s
	Engine Fail To Stop Delay	0 m 0 s
	Battery Under Voltage Warning Delay	0 h 0 m 0 s
	Battery Over Voltage Warning Delay	0 h 0 m 0 s
	Return Delay	0 h 0 m 0 s
	Mains Transient Delay	0 m 0 s
	Mains Transfer Time	0 m 0.0 s
Schedule	Schedule	Active / Inactive
	Schedule Period	Weekly / Monthly,
	On Load / Off Load / Auto Start Inhibit, Week, Start Time, Run Time and Day Selection (1-8)	Press ✓ (Tick) to begin editing then press + (Plus) or - (Minus) when selecting the different parameters.

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 (Up) and (Down) buttons simulatenously to enter the running editor.

EDITING A PARAMETER

- Enter the edtior as decribed above
- Press the (Up) or (Down) buttons to select the parameter to view/change within the currently selected section.
- To edit the parameter, press the ✓ (Tick) button to enter edit mode. The parameter begins to flash to indicate editing.
- Press the + (Plus) or - (Minus) buttons to change the parameter to the required value.
- Press the ✓ (Tick) button to save the value. The parameter ceases flashing to indicate that it has been saved.
- To exit the editor and save the changes, press and hold the ✓ (Tick) button.
- To exit the editor and not save the changes, press and hold the O (Stop/Reset) button

RUNNING CONFIGURATION EDITOR PARAMETERS

Section	Parameter As Shown On Display	Values
Display	Contrast	0 %
	Language	English

REQUIREMENTS FOR UL CERTIFICATION

WARNING!: More than one live circuit exists, see diagram overleaf for further information.

Specification	Description
Screw Terminal Tightening Torque	• 4.5 lb-in (0.5 Nm)
Conductors	• Terminals suitable for connection of conductor size 13 AWG to 20 AWG (0.5 mm² to 2.5 mm²). • Conductor protection must be provided in accordance with NFPA 70, Article 240 • Low voltage circuits (35 V or less) must be supplied from the engine starting battery or an isolated secondary circuit. • The communication, sensor, and/or battery derived circuit conductors shall be separated and secured to maintain at least ¼" (6 mm) separation from the generator and mains connected circuit conductors unless all conductors are rated 600 V or greater.
Current Inputs	• Must be connected through UL Listed or Recognized isolating current transformers with the secondary rating of 5 A max.
Communication Circuits	• Must be connected to communication circuits of UL Listed equipment
DC Output Pilot Duty	• 0.5 A
Mounting	• Suitable for flat surface mounting in Type 1 Enclosure Type rating with surrounding air temperature -22 ºF to +122 ºF (-30 ºC to +50 ºC) • Suitable for pollution degree 3 environments when voltage sensing inputs do not exceed 300 V. When used to monitor voltages over 300 V device to be installed in an unventilated or filtered ventilation enclosure to maintain a pollution degree 2 environment.
Operating Temperature	• -22 ºF to +122 ºF (-30 ºC to +50 ºC)

DIMENSIONS AND MOUNTING

DIMENSIONS
216 mm X 158 mm X 42 mm
(8.5 " X 6.2 " X 1.6 ")

PANEL CUTOUT
182 mm X 137 mm
(7.2 " X 5.4 ")

WEIGHT
0.51 kg
(1.12 lb)

TEMPERATURE
Operating: -40 ºC to +70 ºC
(-40 ºF to +158 ºF)

Storage: -40 ºC to +80 ºC
(-40 ºF to +176 ºF)

FIXING CLIPS

NOTE: In conditions of excessive vibration, mount the control panel on suitable anti-vibration mountings

The module is held into the control panel fascia using the supplied fixing clips.

- 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 DSE module's 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 quarter of a turn to secure the module into the control panel's fascia. Care must be taken not to over tighten the fixing clip screws.