DEEP SEA ELECTRONICS

053-253
ISSUE 1

DSEG8660 Installation Instructions

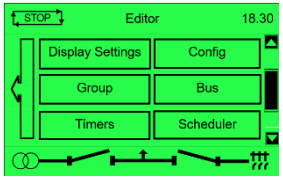
This document details the installation and operation requirements of the DSEG8660 module and is part of the DSEGenset® range of products.

The DSEG8660 module contains two software applications, Mains Controller and Group Controller.
The DSEG8660 module has been designed to monitor the mains (utility) supply and automatically start/stop one or more generator sets equipped with DSEG8600 (Multi Set) controllers depending upon the status of the mains (utility) supply.
Configured as a Group Controller which allows the expansion of a system beyond the 64-module limit that is imposed by the capacity of a CAN bus.

CONTROL BUTTONS

Icon	Description
	**Mode Button** In the G8660 the mode button is used to select ***Auto Mode, Test Mode,*** or ***Manual Mode***. Pressing the button cycles through ***Auto mode*** > (***Test mode***) > ***Manual mode*** > ***Auto mode*** >.
	**Alarm Mute / Lamp Test** This button silences the audible alarm in the controller, de-activates the *Audible Alarm* output (if configured) and illuminates all the LEDs on the module's facia as a lamp test function.
	**RHS Breaker Button** Transfer to generator / bus **LHS Breaker Button** Transfer to Mains
	**Stop / Reset Mode** This button places the module into its ***Stop/Reset Mode***. This clears any alarm conditions for which the triggering criteria has been removed. If the generators are running and the module is put into ***Stop/Reset Mode***, the module automatically instructs the generators to ramp off load and stop. Should any form of *start signal* be present when in ***Stop/Reset Mode*** the generators remain at rest.
	**Start** This button is only active in the ***Stop/Reset Mode and Manual Mode*** Pressing the ***Start*** button in ***Stop/Reset Mode*** starts the generators and runs them off load. Pressing the ***Start*** button in ***Manual Mode*** starts the generators and runs them off load in.
	**Menu Navigation** Used for navigating the instrumentation, event log and configuration screens.

ACCESSING THE MAIN CONFIGURATION EDITOR

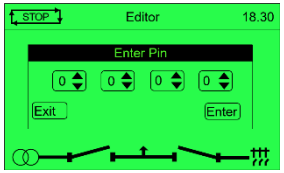


- Ensure the generator bus is dead and the module is in STOP mode by pressing the (Stop/Reset) button.
- Navigate to Editor page:

Home Page — Press → Main Page — Navigate → Editor Page — Press

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

- Press the ***Tick*** button, the first '#' changes to '0'. Press the ***Scroll*** buttons to adjust it to the correct value.
- Press the ***Next Page*** button when the first digit is correctly entered. The digit previously entered now shows as '#' for security.
- Repeat this process for the other digits of the PIN number. Press the ***Previous Page*** 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 the ***Next Page*** or ***Previous Page*** buttons to cycle to the section to view/change.
- Press the ***Scroll*** 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 is highlighted to indicate editing.
- Press the ***Scroll*** buttons or ***Next Page*** or ***Previous Page*** 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.

NOTE: If the editor is left inactive for the duration of the *LCD Page Timer*, it is automatically exited to ensure security. The PIN number is automatically reset when the editor is exited (manually or automatically) to ensure security. Comprehensive module configuration is possible using the DSE Configuration Suite PC Software, refer to DSEpublication 0*57-322 DSE8600 Configuration Suite PC Software Manual* available from www.deepseaelectronics.com.

NOTE: Depending upon module configuration, some parameters in the Main and Running Editors may not be available. For more information refer to DSE publication *057-324 DSE8600 Configuraiton Suite PC Software Manual* available from www.deepseaelectronics.com

MAIN CONFIGURATION EDITOR PARAMETERS

Section	Parameter As Shown On Display	Values
Display	Contrast	0%
	Language	English, Other.
	Current Date and Time	DD:MM:YY, hh:mm:ss
Alt Config	Default Config	Default Config / Alternative Config
Bus	Start Delay On Load	0 h 0 m 0 s
	Battery Under Voltage Warning	Active / Inactive
	Battery Under Voltage Warning Delay	0 h 0 m 0 s
	Battery Under Voltage Warning	0.0 V
	Battery Over Voltage Warning	Active / Inactive
	Battery Over Voltage Warning Delay	0 h 0 m 0 s
	Battery Over Voltage Warning	0.0 V
	Load Level For More Sets	0 %
	Load Level For Less Sets	0 %
	Ramp Up Rate	0.0 %
	Ramp Down Rate	0.0 %
	Bus Over Zero Seq Volts	Active / Inactive
	Bus Over Zero Seq Volts	0.0 V
	Bus Under Pos Seq Volts	Active / Inactive
	Bus Under Pos Seq Volts	0.0 V
	Bus Over Neg Seq Volts	Active / Inactive
	Bus Over Neg Seq Volts	0.0 V
	Bus Asymmetry High	Active / Inactive
	Bus Asymmetry High	0.0 V
	Enable MSC Compatibility	Active / Inactive
Mains	Under Voltage Trip	0 V
	Over Voltage Trip	0 V
	Under Frequency Trip	0 Hz
	Over Frequency Trip	0 Hz
	Transient Delay	0.0 s
	CT Primary	0 A Power Cycle After Exit
	CT Secondary	0 A Power Cycle After Exit
	Full kW Rating	0 kW
	Full kVar Rating	0 kvar
	Mains Over Zero Seq Volt	Active / Inactive
	Mains Over Zero Seq Volt	0 V
	Mains Under Pos Seq Volt	Active / Inactive
	Mains Under Pos Seq Volt	0 V
	Mains Over Neg Seq Volt	Active / Inactive
	Mains Over Neg Seq Volt	0 V
	Mains Asymmetry High	Active / Inactive
	Mains Asymmetry High	0 V
Timers	LCD Page Delay	0 h 0 m 1 s
	LCD Sleep Timer	0 h 0 m 0 s
	Remote Start On Load	0 h 0 m 0 s
	Remote Start Off Load	0 h 0 m 0 s
	Telemetry Start	0 h 0 m 0 s
	Parallel Run Time	0 h 0 m 0 s
	Start form AMSC Master	0 h 0 m 0 s
	Transfer Time/ Load Delay	0 h 0 m 0 s
	Breaker Close Pulse	0 h 0 m 0 s
	Breaker Trip Pulse	0 h 0 m 0 s
	Bus Close Delay	0 h 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
	Generator Transient Delay	0 s
	Mains Fail	0 s
	Mains Transient Delay	0 s
	Mains Transfer Time	0 s
	Mains Over Zero Seq Volt Delay	0.0 s
	Mains Under Pos Seq Volt Delay	0.0 s
	Mains Over Neg Seq Volts Delay	0.0 s
	Mains Asymmetry High Delay	0.0 s
	Gen Over Zero Seq Volt Delay	0.0 s
	Gen Under Pos Seq Volt Delay	0.0 s
	Gen Over Neg Seq Volts Delay	0.0 s
	Gen Asymmetry High Delay	0.0 s
Schedule	Schedule	Active / Inactive
	Schedule Bank 1 Period	Weekly / Monthly,
	Island / Parallel / Off Load / Auto Start Inhibit, Week, Start Time, Run Time and Day. Selection (1 to 8)	Press the ***Tick*** button to begin editing then up or down when selecting the different parameters.
	Schedule Bank 2 Period	Weekly / Monthly,
	Island / Parallel / Off Load / Auto Start Inhibit, Week, Start Time, Run Time and Day. Selection (1 to 8)	Press the ***Tick*** button to begin editing then up or down when selecting the different parameters.

ACCESSING THE 'RUNNING' CONFIGURATION EDITOR

- ***Press*** the ***Next Page***  button to access the Main Menu page.
- Press the ***Previous Page***  button followed by either the ***Scroll***  buttons or the ***Next Page*** or ***Previous Page***  buttons to locate the *'Running' Configuration Editor.*

RUNNING CONFIGURATION EDITOR PARAMETERS

Section	Parameter As Shown On Display	Values
Display	Contrast	75 %
	Units Pressure	kPa, bar, psi
	Units Temperature	°C, ° F
	Units Volume	Litres. Imp gal. Us gal
	Language	English, Other
Synchronising	Commissioning Screen	Active / Inactive
	Override Starting Alarms	Active / Inactive
	Voltage Adjust (Manual Mode Only With Gen Open)	0%
	Frequency Adjust (Manual Mode Only With Gen Open)	0%
Load Control	Injection Port	Active / Inactive
	Mains Decoupling Test Mode	Active / Inactive
	Power Control Mode	Constant Power / Frequency-Power / Voltage-Power
	Load Parallel Power	0 %
	Load Parallel kVArs	0 %
	Load Parallel PF	0.00 pf
	Governor Droop Offset	0%
	Governor Ramp Rate	0%
	AVR Droop Offset	0%
	AVR Ramp Rate	0%
	Load Priority	1-64

ELECTRICAL SPECIFICATIONS

Parameter	Specification
DC Supply Voltage	8 V_{DC} to 35 V_{DC}
Maximum Operating Current	530 mA at 12 V 280 mA at 24 V
Maximum Standby Current	320 mA at 12 V 120 mA at 24 V
Typical Power (Controller On, Heater Off)	3.8 W to 4.1 W
Typical Power (Controller On, Heater On)	6.8 W to 7.1 W
Mains Phase to Neutral Voltage Sensing	15 V_{AC} to 345 V_{AC}
Mains Phase to Phase Voltage Sensing	26 V_{AC} to 720 V_{AC}
Mains Voltage Sensing Offset from Earth	100 V_{AC}
Volt-Free Output Rating	8 A at 250 V_{AC}, 5 A at 30 V_{DC}

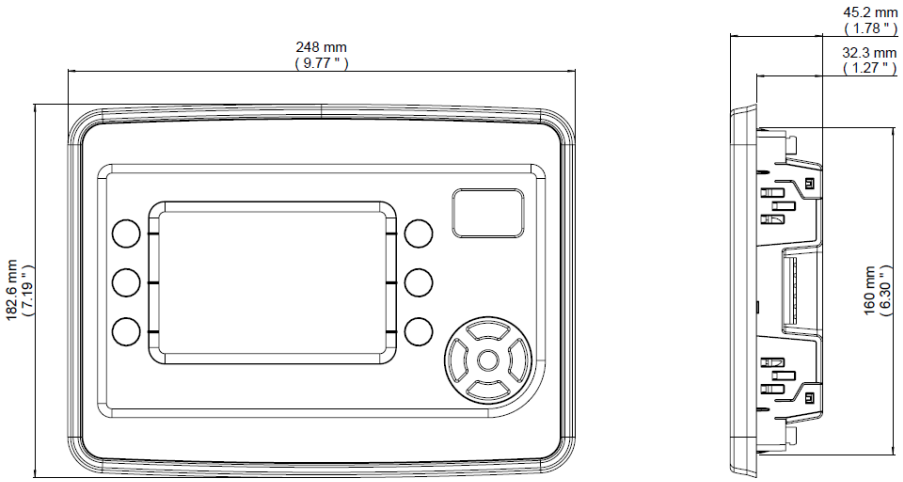
REQUIREMENTS FOR UL CERTIFICATION

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.
Maximum Operating Temperature	• 122 ºF (50 ºC)

DIMENSIONS AND MOUNTING

Parameter	Specification
Dimensions	248 mm x 182.6 mm x 45.2 mm (9.76 ” x 7.18 ” x 1.77 ”)
Panel Cutout	220 mm X 160 mm (8.7” X 6.3”)
Weight	0.76 kg (1.67 lb)
Operating Temperature with Standard Display	-30 ºC to +70 ºC (-22 ºF to +158 ºF)
Operating Temperature with Heated Display	-40 ºC to +70 ºC (-40 ºF to +158 ºF)
Storage Temperature	-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

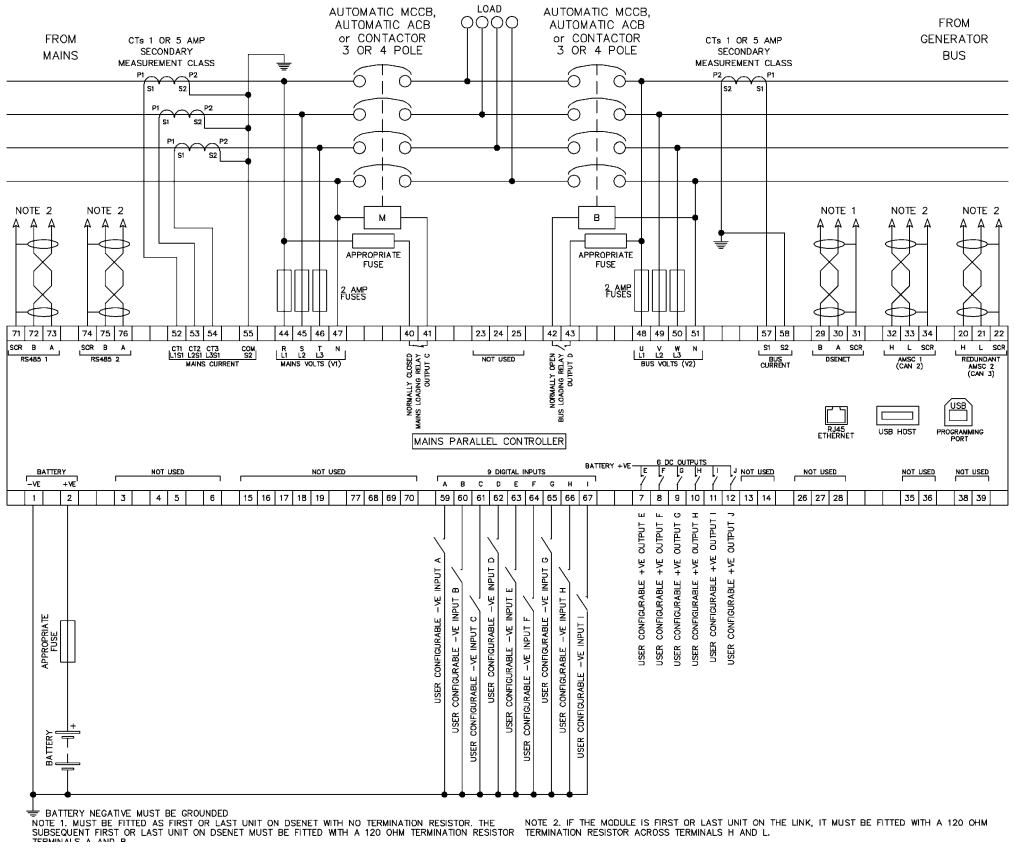
The module is held into the control panel fascia using the supplied fixing clips.

- **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.**

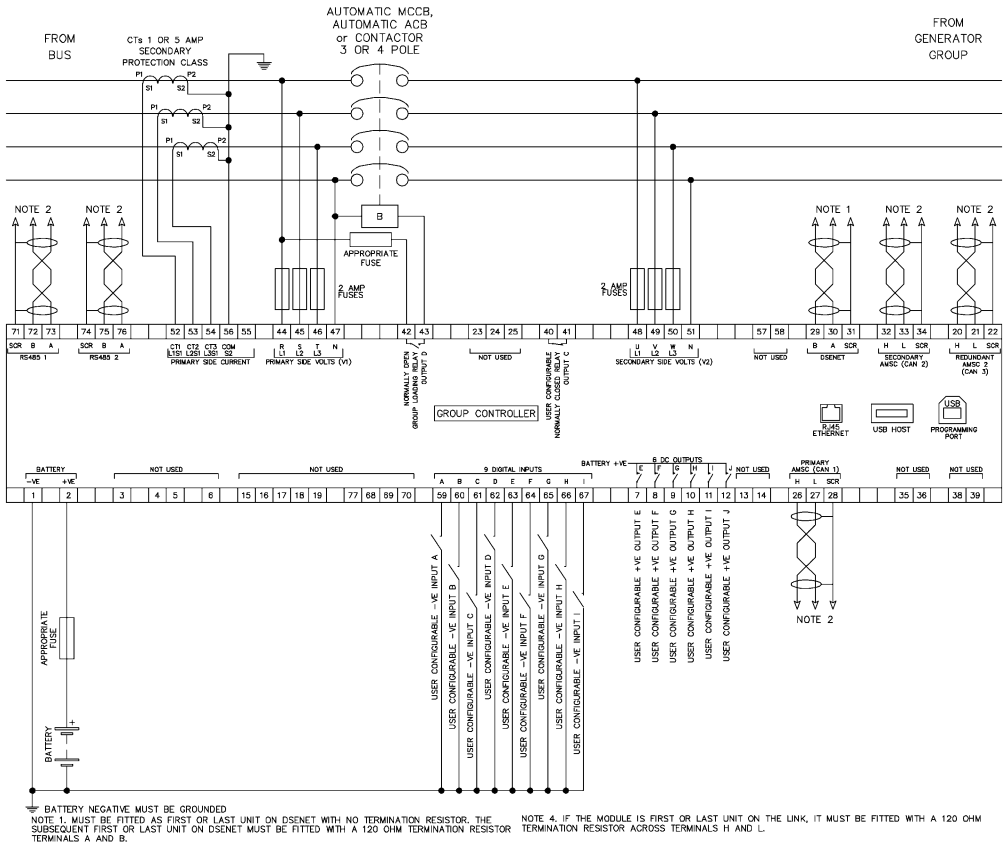
TYPICAL WIRING DIAGRAMS

NOTE: A larger version of the Typical Wiring Diagram is available in the product’s operator manual, refer to DSE Publication: *057-323 DSE8660 Operator Manual* available from www.deepseaelectronics.com for more information.

Mains Parallel Controller



Group Controller



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