DSEGenset

DSE

DSE6110/20

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

FEATURES

The DSE6110 is an Auto Start Control Module and the DSE6120 is an Auto Mains (Utility) Failure Control Module suitable for a wide variety of single gen-set applications.

Monitoring speed, frequency, voltage, current, oil pressure, coolant temperature and fuel level, the modules will display warnings, shutdown and engine status information on the back-lit LCD screen and illuminated LED.

Both modules offer electronic (CAN) and non-electronic (magnetic pick-up/alternator sensing) engine versions and offer a number of flexible inputs, outputs and engine protections so the system can be easily adapted to suit a wide range of application demands.

The modules can be easily configured using the DSE Configuration Suite PC software. Selected front panel editing is also available.

ENVIRONMENTAL TESTING STANDARDS

ELECTRO-MAGNETIC COMPATIBILITY
BS EN 61000-6-2
EMC Generic Immunity Standard for the Industrial Environment
BS EN 61000-6-4
EMC Generic Emission Standard for the Industrial Environment

ELECTRICAL SAFETY
BS EN 60950
Safety of Information Technology Equipment, including Electrical Business Equipment

TEMPERATURE
BS EN 60068-2-1
Ab/Ae Cold Test -30 °C
BS EN 60068-2-2
Bb/Be Dry Heat +70 °C

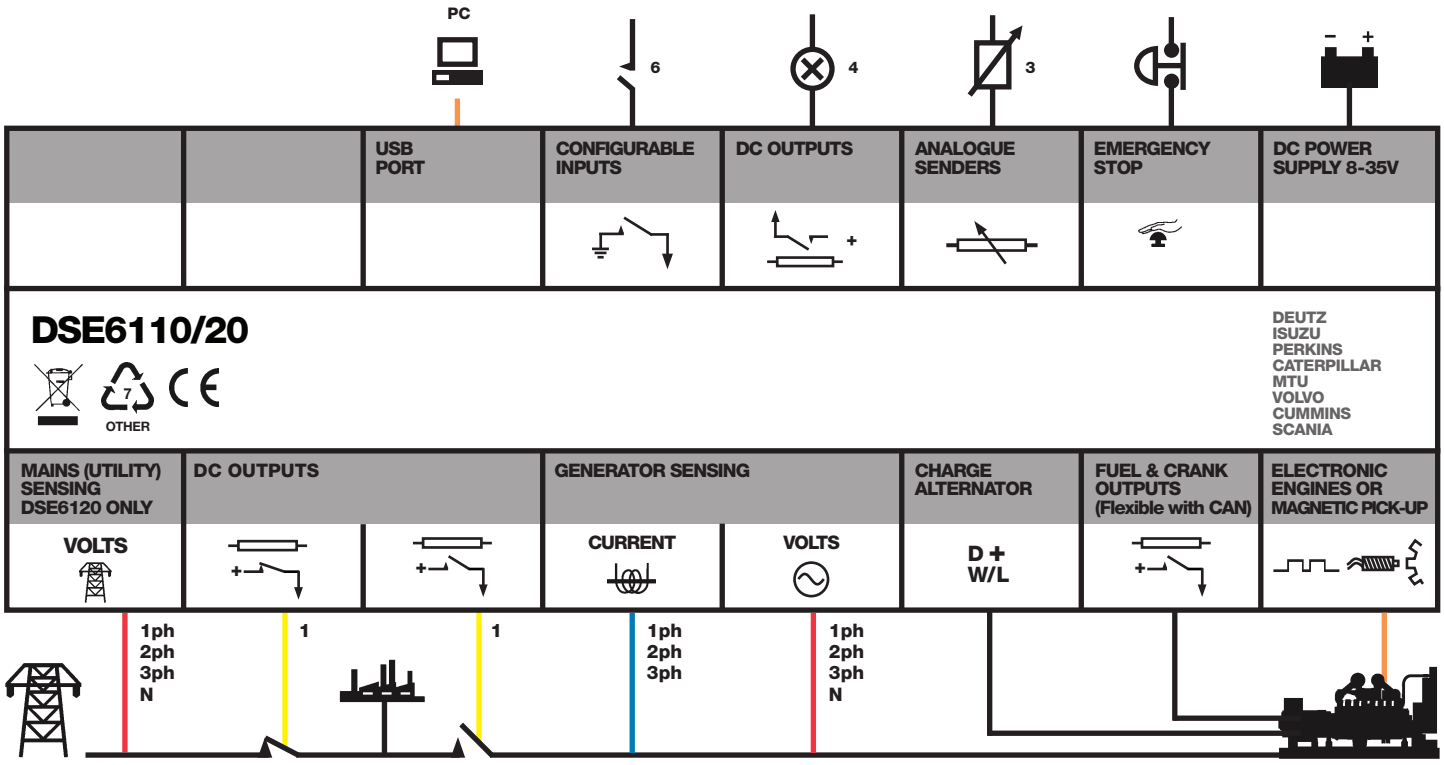
VIBRATION
BS EN 60068-2-6
Ten sweeps in each of three major axes
5 Hz to 8 Hz @ +/-7.5 mm,
8 Hz to 500 Hz @ 2 gn

HUMIDITY
BS EN 60068-2-30
Db Damp Heat Cyclic 20/55 °C @ 95% RH 48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40 °C @ 93% RH 48 Hours

SHOCK
BS EN 60068-2-27
Three shocks in each of three major axes
15 gn in 11 mS

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES
BS EN 60529
IP65 - Front of module when installed into the control panel with the optional sealing gasket.

COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF GEN-SET APPLICATIONS



ISSUE 2

DSEGenset

DSE6110/20

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

FEATURES

DSE**6120**

DSE**6110**

KEY FEATURES

- Back-lit text LCD display
- Front panel editing
- LED and LCD alarm indication
- Power Save mode
- CAN and Magnetic Pick-up/Alt. versions available (specify on ordering)
- PC and front panel configuration
- 6 Digital inputs
- 3 Analogue inputs
- 6 Outputs (4 configurable on Magnetic Pick-up/Alt., 6 configurable on CAN version)
- Configurable timers and alarms
- Alternative configuration
- Event Log (10)
- Remote Start input
- 3 Phase generator monitoring
- Current Monitoring and protection
- 3 Phase Mains (Utility) monitoring (DSE6120 only)
- Test button (DSE6120 only)
- Battery voltage monitoring
- Engine pre-heat
- Hours counter
- Comprehensive shutdown or warning on fault condition

KEY BENEFITS

- Automatically transfers between mains (utility) and generator power (DSE6120 only)
- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout
- Multiple engine parameters are monitored simultaneously
- Module can be configured to suit individual applications
- Compatible with a wide range of CAN engines
- Tier 4 engine support
- Uses DSE Configuration Suite PC software for simplified configuration
- IP65 rating (with optional gasket) offers increased resistance to water ingress
- Licence-free PC software

SPECIFICATION

DC SUPPLY
CONTINUOUS VOLTAGE RATING
8 V to 35 V Continuous

CRANKING DROPOUTS
Able to survive 0 V for 50 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT
178 mA at 12 V, 95 mA at 24 V

MAXIMUM STANDBY CURRENT
88 mA at 12 V, 50 mA at 24 V

CHARGE FAIL/EXCITATION RANGE
0 V to 35 V

MAINS (UTILITY) DSE6120 ONLY
VOLTAGE RANGE
15 V - 333 V AC (L-N)

FREQUENCY RANGE
3.5 Hz to 75 Hz

OUTPUTS
OUTPUT A (FUEL)
2 A DC at supply voltage

OUTPUT B (START)
2 A DC at supply voltage

AUXILIARY OUTPUTS C,D,E & F
2 A DC at supply voltage

GENERATOR
VOLTAGE RANGE
15 V - 333 V AC (L-N)

FREQUENCY RANGE
3.5 Hz to 75 Hz

MAGNETIC PICK UP
VOLTAGE RANGE
+/- 0.5 V to 70 V

FREQUENCY RANGE
10,000 Hz (max)

DIMENSIONS
OVERALL
215 mm x 158 mm x 42 mm
8.5” x 6.2” x 1.6”

PANEL CUT-OUT
182 mm x 137 mm
7.2” x 5.4”

MAXIMUM PANEL THICKNESS
8 mm
0.3”

STORAGE TEMPERATURE RANGE
-40 °C to +85 °C

RELATED MATERIALS

TITLE	PART NO’S
DSE6110 Installation Instructions	053-059
DSE6120 Installation Instructions	053-060
DSE6100 Quick Start Guide	057-102
DSE6100 Operator Manual	057-095
DSE6100 Configuration Suite PC Manual	057-096

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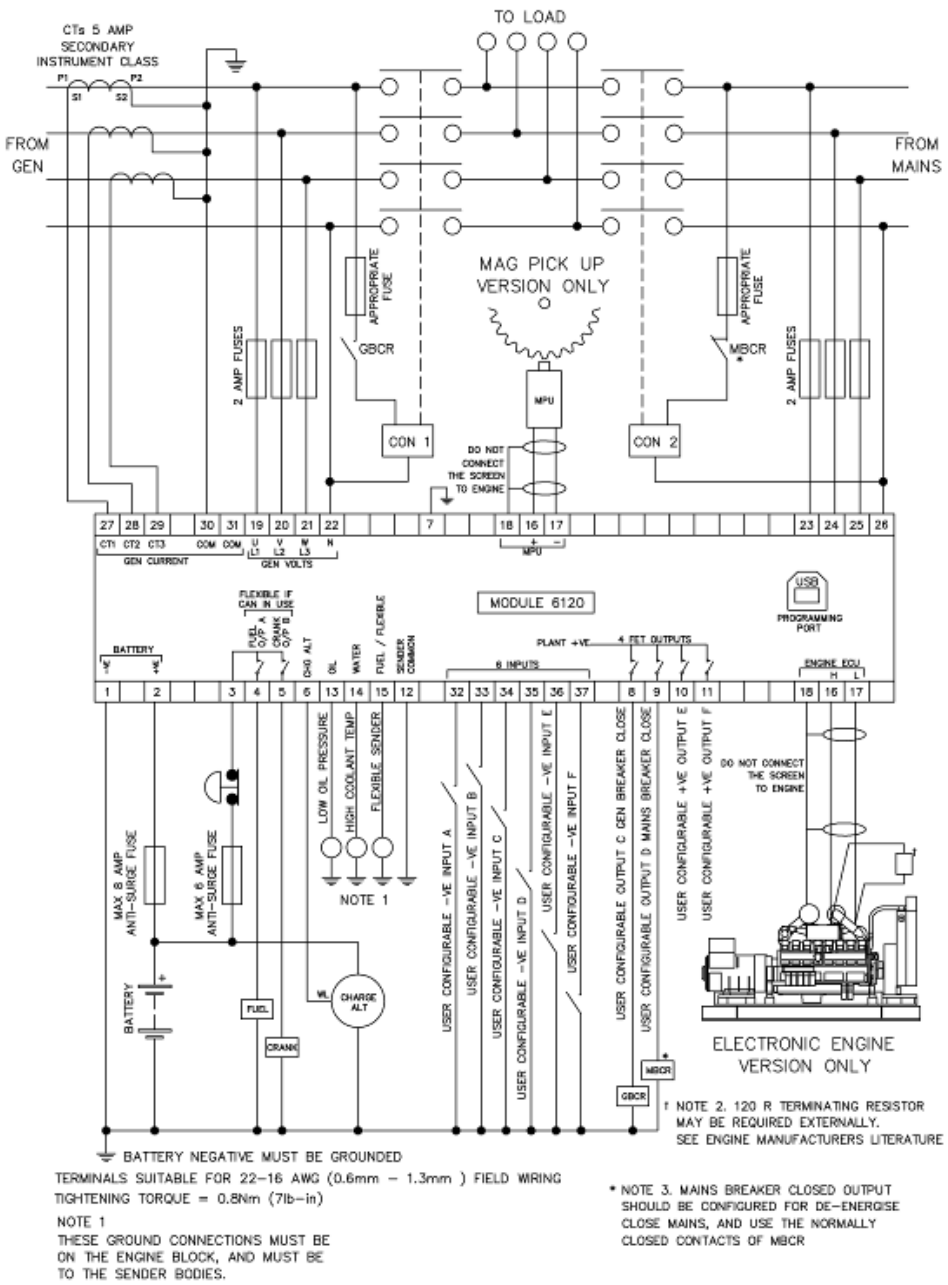
055-069/01/16 (5) US

Typical Wiring Diagram



DEEP SEA ELECTRONICS

DSE6120 Installation Instructions

ACCESSING THE FRONT PANEL EDITOR (FPE)

The module must be in STOP mode with the engine at rest before configuration mode can be accessed.

To enter the **'configuration mode'** press both the **INFO** and **STOP** buttons together.

ENTERING THE CONFIGURATION EDITOR PIN NUMBER

If the module PIN number has been set, the PIN number request is then shown. The configuration cannot be viewed or changed until the PIN number is correctly entered.

- The first * is flashing. Press + or – buttons to adjust it to the correct value for the first digit of the PIN number.
- Press ✓ when the first digit is correctly entered.
- The entered digit will turn back to a * to maintain security.
- Enter the remaining digits of the pin number using the same method.

If the Configuration PIN has been entered successfully (or the PIN number has not been set in the module) the first configurable parameter is displayed.

⚠NOTE:- When ✓ is pressed after editing the final PIN digit, the PIN is checked for validity. If the number is not correct, the editor is automatically exited. To retry you must re-enter the editor as described above.

EDITING A PARAMETER

Enter the editor as described above.

- Press to select the required 'page' as detailed below.
- Press (+) to select the next parameter or (-) to select the previous parameter within the current page.
- When viewing the parameter to be changed, press the (✓) button. The value begins to flash.
- Press (+) or (-) to adjust the value to the required setting.
- Press (✓) the save the current value, the value ceases flashing.
- Press and hold the (✓) button to exit the editor.

⚠NOTE: - Values representing pressure will be displayed in Bar. Values representing temperature are displayed in degrees Celsius.

⚠NOTE: - When the editor is visible, it is exited after 5 minutes of inactivity to ensure security.

⚠NOTE:- To exit the front panel configuration editor at any time, press and hold the (✓) button. Ensure you have saved any changes you have made by pressing the ✓ button first.

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

ADJUSTABLE PARAMETERS (Configuration editor)

(Factory default settings are shown in bold italicised text)

Section	Parameter as shown on display	Values
PIN	Pin Entry	# # # #
DISPLAY	Contrast	0% - 100% (***53%***)
	Language	***English*** - Others
	LCD Page Timer	hh:mm:ss (***5m***)
	Auto Scroll Delay	1s - 1hr (***2s***)
	Day and Time	Day - hh:mm:ss
ALT CONFIG	Default Config	Default Config
ENGINE	Oil Pressure Low Shutdown	0bar - 9.97bar (***1.03bar***)
	Coolant Temperature High Shutdown	2ºC - 140ºC (***95ºC***)
	Start Delay Timer	0 - 10hr (***5s***)
	Pre Heat Timer	0 - 5m (***0s***)
	Crank Duration Timer	0 - 1m (***10s***)
	Crank Rest Timer	0 - 1m (***10s***)
	Safety On Delay	0 - 1m (***10s***)
	Smoke Limiting	0 - 15m (***0s***)
	Smoke Limiting Off	0 - 1m (***0s***)
	Warm Up Timer	0 -1hr (***0s***)
	Cool Down Timer	0 - 1hr (***1m***)
	Speed Low Shutdown	Active, ***Inactive***
	Speed Low Shutdown	0RPM - 6000RPM (***1270RPM)***
	Speed High Shutdown	0RPM - 6000RPM (***1740RPM***)
	Speed Overshoot Delay	0-10s (***2s***)
	Speed Overshoot	0% - 10% (***0s***)
	Fail To Stop Delay	0 - 2m (***30s***)
	Battery Voltage Low Warning	***Active***, Inactive
	Battery Low Voltage	0V – 40V (***10V***)
	Battery voltage Low Warning Delay	0 - 24hr (***1m***)
	Battery Voltage High Warning	***Active***, Inactive
	Battery Voltage High Warning Delay	0V - 24hr (***1m***)
	Battery Voltage High Warning	0V – 40V (***30V***)
	Charge Alternator Failure Warning	***Active***, Inactive
	Charge Alternator Failure Warning	0V – 39V (***6V***)
	Charge Alternator Failure Warning Delay	0 - 24hr (***5s***)
	Charge Alternator Failure Shutdown	***Active***, Inactive
	Charge Alternator Failure Shutdown	0V – 5.9V (***4.0V***)
	Charge Alternator Failure Shutdown Delay	0 - 24hr (***5s***)
	Low Battery Start	Active, ***Inactive***
	Low Battery Level	0V – 40.0V (***18.0V***)
	Low Battery Start Delay	hh:mm:ss (***10s***)
	Low Battery Run Time	hh:mm:ss (***30s***)

FIXING CLIPS

The module is held into the 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 6000 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. Care should be taken not to over tighten the fixing clip screws.

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

ADJUSTABLE PARAMETERS (Configuration Editor - Continued)

(Factory default settings are shown in bold italicised text)

Section	Parameter as shown on display	Values
GENERATOR	Voltage Low Shutdown	50V – 360V (***184V***)
	Voltage Nominal	50V – 276V (***230V***)
	Voltage High Shutdown	231V – 360V (***277V***)
	Frequency Low Shutdown	0Hz - 75Hz (***43Hz***)
	Frequency Nominal	0Hz - 75Hz (***50Hz***)
	Frequency High Shutdown	0Hz - 75Hz (***58Hz***)
	Full Load Rating	5A – 6000A (***500A***)
	Delayed Over Current	***Active***, Inactive
	Delayed Over Current	50% - 120% (***100%***)
	AC System	Single Phase, 2 Wire ***3 Phase, 4 Wire*** 2 Phase, 3 Wire (L1 & L3) 3 Phase, 4 Wire (Delta) 2 Phase, 3 Wire (L1 & L2) 3 Phase, 3 Wire
	CT Primary	5A - 6000A (***600A***)
	Generator Transient Delay	0 - 10m (***0.7s***)
MAINS	Voltage Low Trip	50V – 360V ***(184V)***
	Voltage High Trip	50V – 360V ***(276V)***
	Frequency Low Trip	0Hz - 75Hz ***(45Hz)***
	Frequency High Trip	0Hz - 75Hz ***(55Hz)***
	Mains Transient Delay	0 - 30s ***(2s)***
	Return Delay	0 - 1hr ***(30s)***
	Mains Transfer Time	0 - 10m ***(0.7s)***
TIMERS	LCD Page Timer	hh:mm:ss (***5m***)
	Auto Scroll Delay	1s - 1hr (***2s***)
	Pre Heat Timer	0 - 5m (***0s***)
	Crank Duration Timer	0 - 1m (***10s***)
	Crank Rest Timer	0 - 1m (***10s***)
	Safety On Delay	0 - 1m (***10s***)
	Smoke Limiting	0 - 15m (***0s***)
	Smoke Limiting Off	0 - 1m (***0s***)
	Warm Up Timer	0 -1hr (***0s***)
	Cool Down Timer	0 - 1hr (***1m***)
	Fail To Stop Delay	0 - 2m (***30s***)
	Battery voltage Low Warning Delay	0 - 24hr (***1m***)
	Battery Voltage High Warning Delay	0V - 24hr (***1m***)
	Return Delay	0 - 5hr (***30s***)
	Generator Transient Delay	0 - 10m (***0.7s***)
	Mains Transient Delay	0 - 30s (***2s***)
	Mains Transfer Time	0 - 10m (***0.7s***)
SCHEDULER	Scheduler	Active, ***Inactive***
	Schedule On Load	Active, ***Inactive***
	Schedule Start	Day - hh:mm
	Schedule Period	hh:mm (***5m***)

DIMENSIONS AND MOUNTING

For flat surface mounting in a Type 1 enclosure to meet UL requirements.

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

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

WEIGHT
510g (0.51kg)