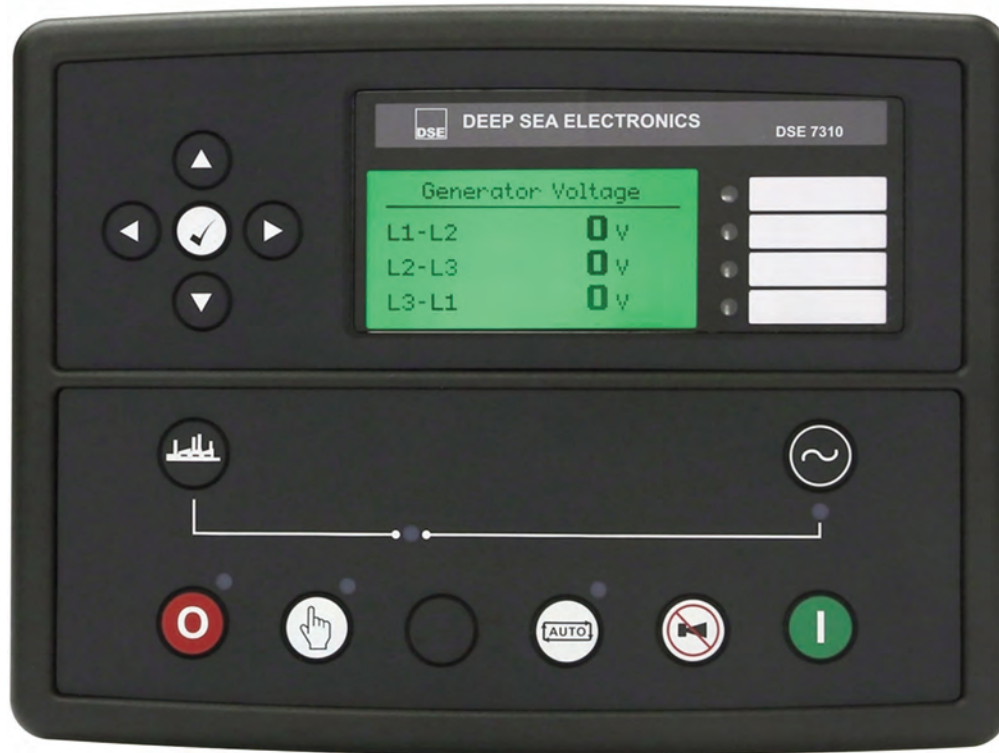


DSE DEEP SEA CONTROL REVIEW

For ANA SDG-Series Generators



CLICK SECTION TITLE BELOW TO JUMP TO SECTION

SECTION 1

Reviewing the Control Front

SECTION 3

Reviewing the Control Screens

SECTION 2

Reviewing the Control Back

SECTION 4

Escape Mode

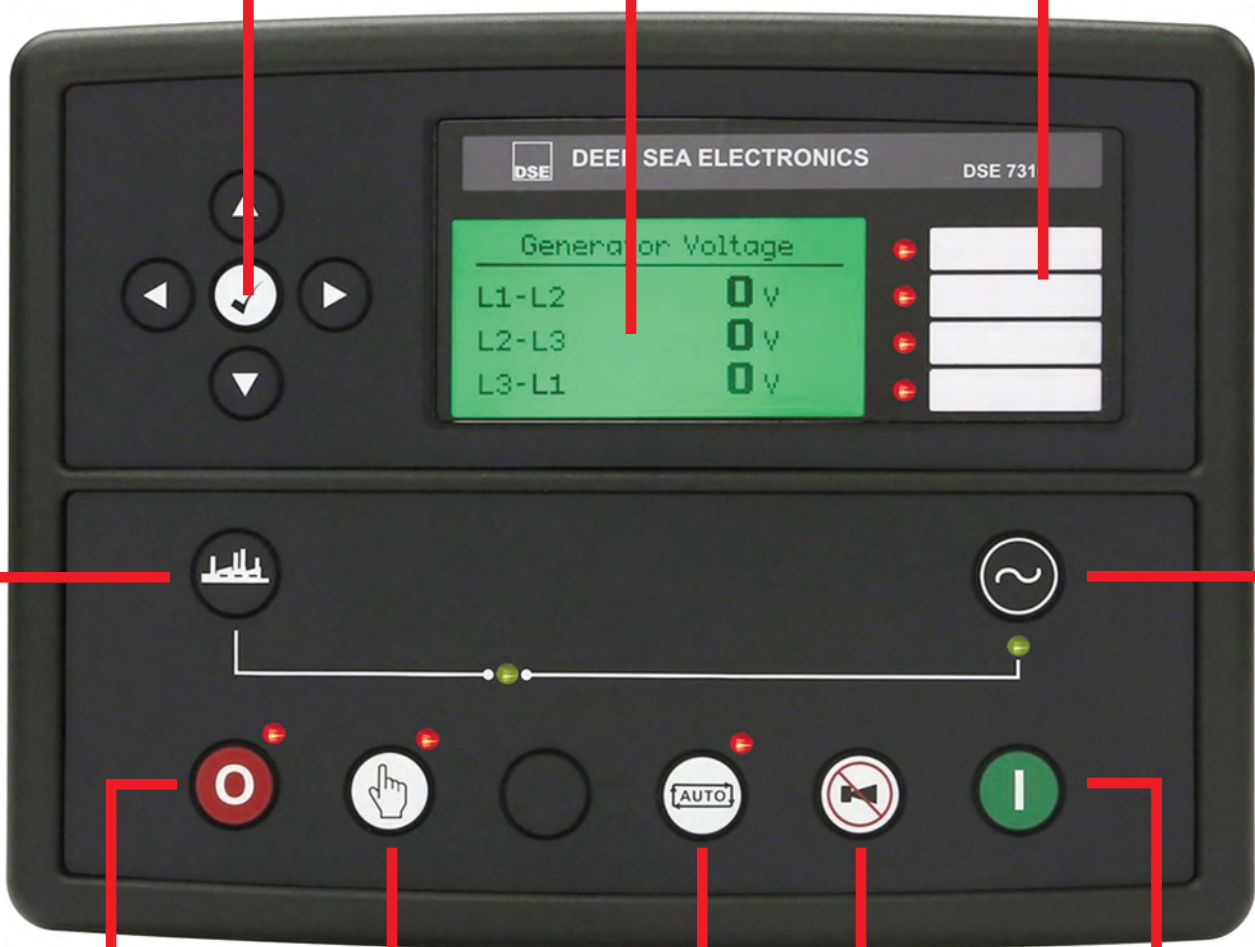
SECTION 1 - REVIEWING THE CONTROL FRONT

DSE Deep Sea Control

Menu Navigation

Module Display

Four Configurable
Status LEDs



Stop / Reset
Mode

Manual
Mode

Auto
Mode

Alarm Mute
& Lamp Test

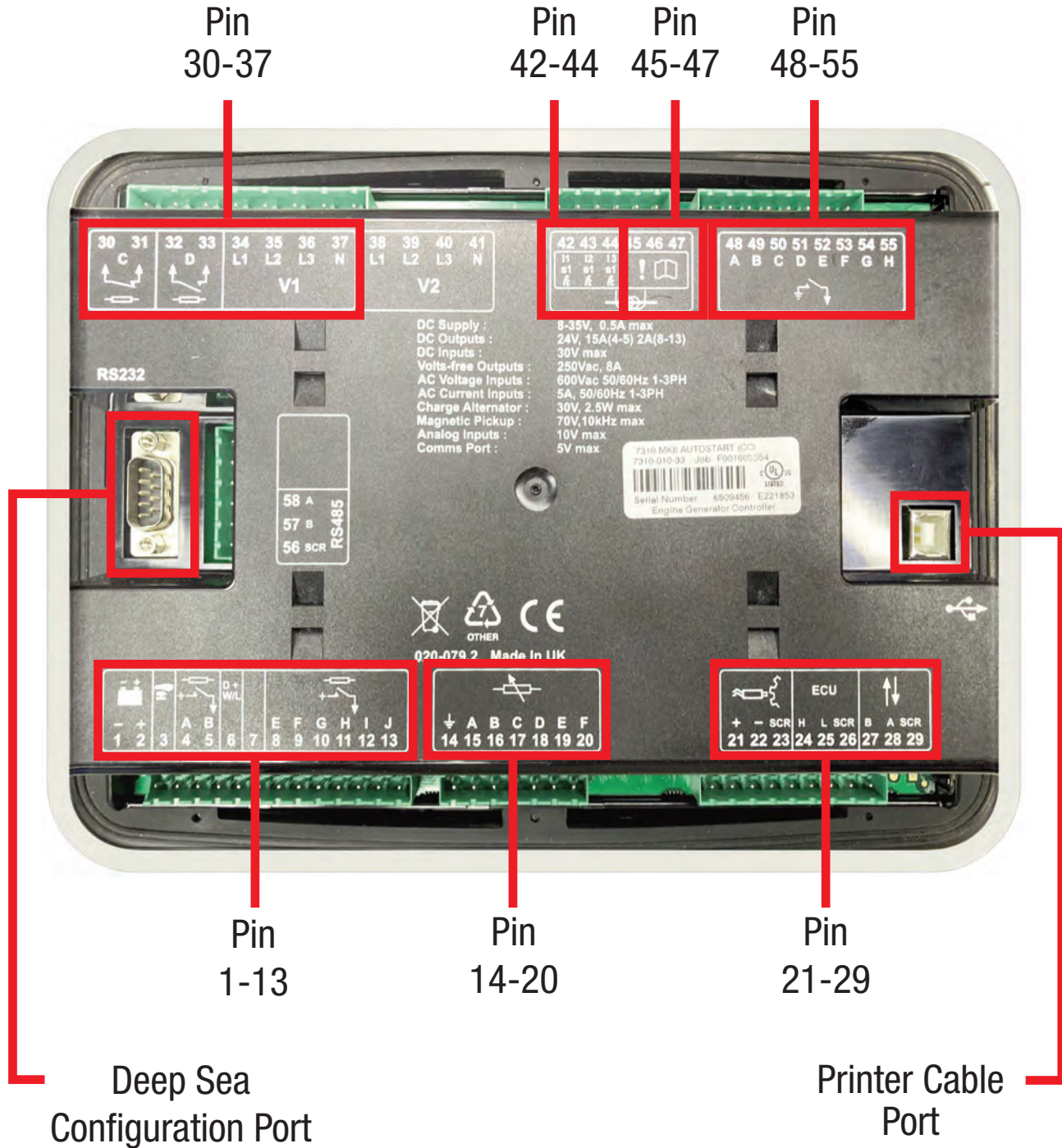
Start

Open Generator
(Manual Mode Only)

Close Generator
(Manual Mode Only)





SECTION 2 - REVIEWING THE CONTROL BACK

DSE Deep Sea Control

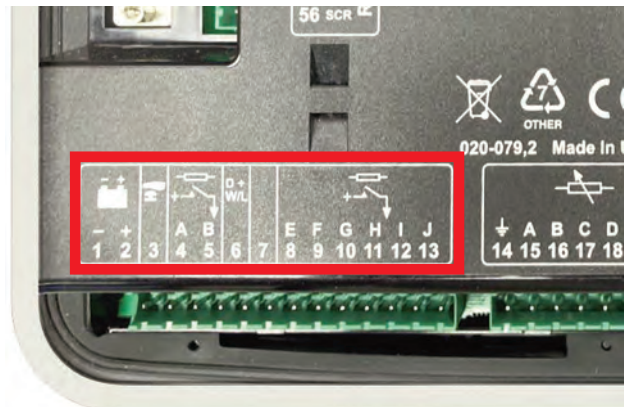


SECTION 2 - REVIEWING THE CONTROL BACK

DSE Deep Sea Control

Pin No	Description	Cable Size	Notes
	1	2.5 mm ² AWG 13	Connect to ground where applicable.
	2	2.5 mm ² AWG 13	Supplies the module and DC Outputs E, F, G, H, I & J
	3	2.5 mm ² AWG 13	Plant Supply Positive. Supplies DC Outputs A & B.
	4	2.5 mm ² AWG 13	Plant Supply Positive from terminal 3. 15 A DC rated Fixed as fuel relay if electronic engine is not configured.
	5	2.5 mm ² AWG 13	Plant Supply Positive from terminal 3. 15 A DC rated Fixed as start relay if electronic engine is not configured.
D+ W/L	6	2.5 mm ² AWG 13	Do not connect to ground (battery negative). If charge alternator is not fitted, leave this terminal disconnected.
	7	DO NOT CONNECT	
	8	1.0 mm ² AWG 18	Plant Supply Positive from terminal 2. 2 A DC rated.
	9	1.0 mm ² AWG 18	Plant Supply Positive from terminal 2. 2 A DC rated.
	10	1.0 mm ² AWG 18	Plant Supply Positive from terminal 2. 2 A DC rated.
	11	1.0 mm ² AWG 18	Plant Supply Positive from terminal 2. 2 A DC rated.
	12	1.0 mm ² AWG 18	Plant Supply Positive from terminal 2. 2 A DC rated.
	13	1.0 mm ² AWG 18	Plant Supply Positive from terminal 2. 2 A DC rated.

Pin 1-13

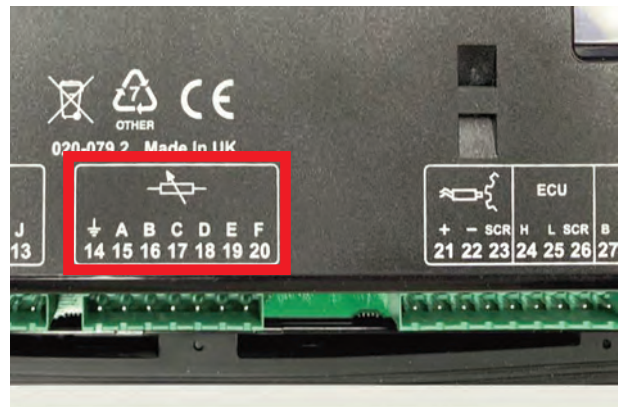


SECTION 2 - REVIEWING THE CONTROL BACK

DSE Deep Sea Control



Pin No	Description	Cable Size	Notes
14	Sensor Common Return	0.5 mm ² AWG 20	Ground Return Feed For Sensors
15	Analogue Sensor Input A	0.5 mm ² AWG 20	Connect To Oil Pressure Sensor
16	Analogue Sensor Input B	0.5mm ² AWG 20	Connect To Coolant Temperature Sensor
17	Analogue Sensor Input C	0.5 mm ² AWG 20	Connect To Fuel Level Sensor
18	Analogue Sensor Input D	0.5 mm ² AWG 20	Connect To Additional Sensor (User Configurable)
19	Analogue Sensor Input E	0.5 mm ² AWG 20	Connect To Additional Sensor (User Configurable)
20	Analogue Sensor Input F	0.5 mm ² AWG 20	Connect To Additional Sensor (User Configurable)

Pin 14-20

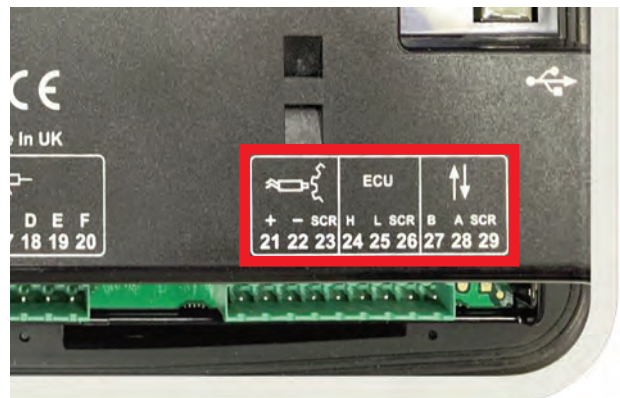


SECTION 2 - REVIEWING THE CONTROL BACK

DSE Deep Sea Control



Pin No	Description	Cable Size	Notes
	21	Magnetic Pickup Positive 0.5 mm ² AWG 20	Connect To Magnetic Pickup Device
	22	Magnetic Pickup Negative 0.5 mm ² AWG 20	Connect To Magnetic Pickup Device
	23	Magnetic Pickup Screen Shield	Connect To Ground At One End Only
ECU	24	ECU Port H 0.5 mm ² AWG 20	Use only 120 Ω CAN or RS485 approved cable
	25	ECU Port L 0.5 mm ² AWG 20	Use only 120 Ω CAN or RS485 approved cable
	26	ECU Port Screen Shield	Use only 120 Ω CAN or RS485 approved cable
	27	DSENet® Expansion B 0.5 mm ² AWG 20	Use only 120 Ω CAN or RS485 approved cable
	28	DSENet® Expansion A 0.5 mm ² AWG 20	Use only 120 Ω CAN or RS485 approved cable
	29	DSENet® Expansion Screen Shield	Use only 120 Ω CAN or RS485 approved cable

Pin 21-29

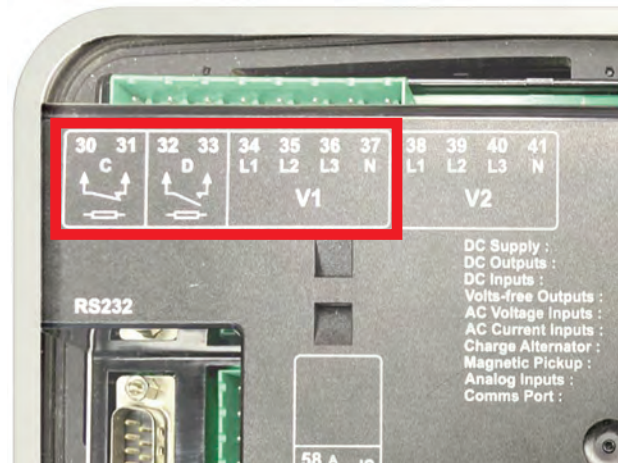


SECTION 2 - REVIEWING THE CONTROL BACK

DSE Deep Sea Control

Pin No	Description	Cable Size	Notes	
 30 31	Normally Closed Volt-Free Relay Output C	1.0mm ² AWG 18	Normally configured to control mains contactor coil	
		1.0mm ² AWG 18		
 32 33	Normally Open Volt-Free Relay Output D	1.0mm ² AWG 18	Normally configured to control generator contactor coil	
		1.0mm ² AWG 18		
V1	34	Generator L1 (U) Voltage Sensing	1.0 mm ² AWG 18	Connect to generator L1 (U) output (AC) (Recommend 2 A fuse)
	35	Generator L2 (V) Voltage Sensing	1.0 mm ² AWG 18	Connect to generator L2 (V) output (AC) (Recommend 2 A fuse)
	36	Generator L3 (W) Voltage Sensing	1.0 mm ² AWG 18	Connect to generator L3 (W) output (AC) (Recommend 2 A fuse)
	37	Generator Neutral (N) Input	1.0 mm ² AWG 18	Connect to generator Neutral terminal (AC)

Pin 30-37

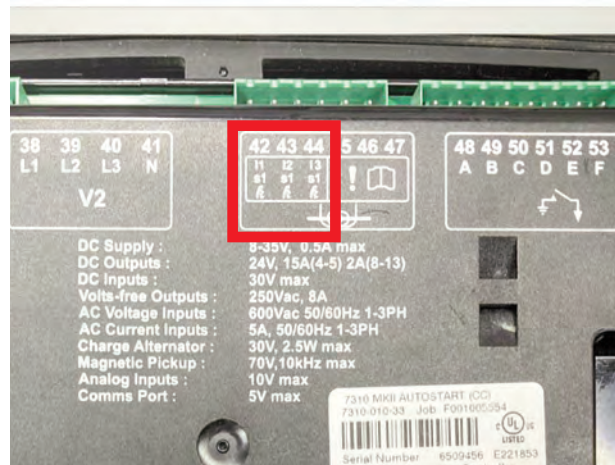


SECTION 2 - REVIEWING THE CONTROL BACK

DSE Deep Sea Control


Pin No	Description	Cable Size	Notes
42	CT Secondary for L1	2.5 mm ² AWG 13	Connect to s1 secondary of L1 monitoring CT
43	CT Secondary for L2	2.5 mm ² AWG 13	Connect to s1 secondary of L2 monitoring CT
44	CT Secondary for L3	2.5 mm ² AWG 13	Connect to s1 secondary of L3 monitoring CT

Pin 42-44

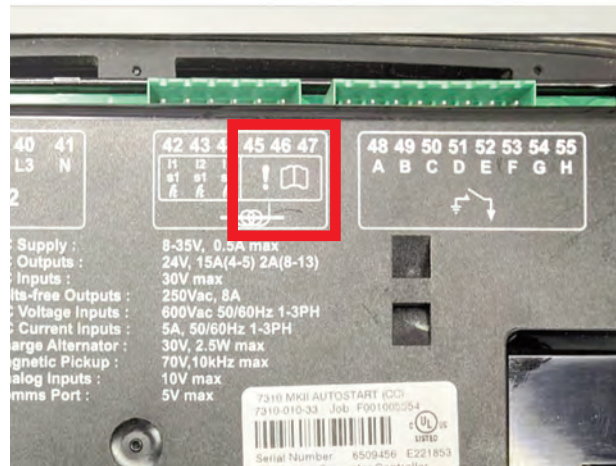


SECTION 2 - REVIEWING THE CONTROL BACK

DSE Deep Sea Control

Topology	Pin No	Notes	Cable Size
No earth fault measuring	45	DO NOT CONNECT	
	46	Connect to s2 of the CTs connected to L1,L2,L3,N	2.5mm ² AWG 13
	47	DO NOT CONNECT	
Restricted earth fault measuring 	45	Connect to s2 of the CTs connected to L1,L2,L3,N	2.5mm ² AWG 13
	46	Connect to s1 of the CT on the neutral conductor	2.5mm ² AWG 13
	47	DO NOT CONNECT	
Un-restricted earth fault measuring (Earth fault CT is fitted in the neutral to earth link)	45	Connect to s2 of the CT on the neutral to earth link.	2.5mm ² AWG 13
	46	Connect to s1 of the CT on the neutral to earth link. Also connect to the s2 of CTs connected to L1, L2, L3.	2.5mm ² AWG 13
	47	DO NOT CONNECT	

Pin 45-47



SECTION 2 - REVIEWING THE CONTROL BACK

DSE Deep Sea Control


Pin No	Description	Cable Size	Notes
48	Configurable Digital Input A	0.5 mm ² AWG 20	Switch To Negative
49	Configurable Digital Input B	0.5 mm ² AWG 20	Switch To Negative
50	Configurable Digital Input C	0.5 mm ² AWG 20	Switch To Negative
51	Configurable Digital Input D	0.5 mm ² AWG 20	Switch To Negative
52	Configurable Digital Input E	0.5 mm ² AWG 20	Switch To Negative
53	Configurable Digital Input F	0.5 mm ² AWG 20	Switch To Negative
54	Configurable Digital Input G	0.5 mm ² AWG 20	Switch To Negative
55	Configurable Digital Input H	0.5 mm ² AWG 20	Switch To Negative

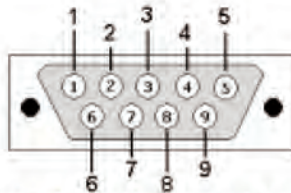
Pin 48-55



SECTION 2 - REVIEWING THE CONTROL BACK

DSE Deep Sea Control

Description	Notes
	Socket for connection to a modem or PC with DSE Configuration Suite Software Supports MODBUS RTU protocol or external modem



View looking into the male connector on the module

PIN No	Notes
1	Received Line Signal Detector (Data Carrier Detect)
2	Received Data
3	Transmit Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Request To Send
8	Clear To Send
9	Ring Indicator

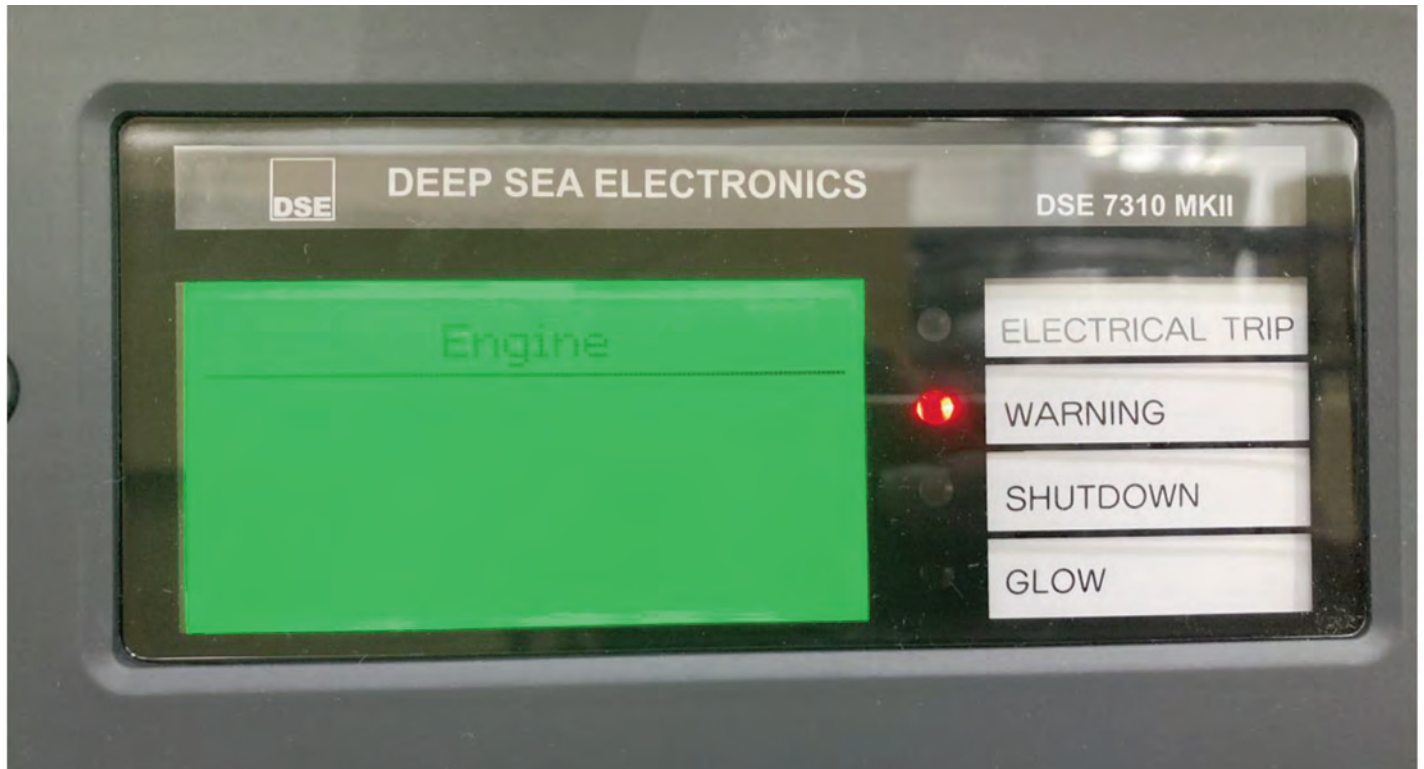


Deep Sea
Configuration Port

Printer
Cable Port

SECTION 3 - REVIEWING THE CONTROL SCREENS

DSE Deep Sea Control



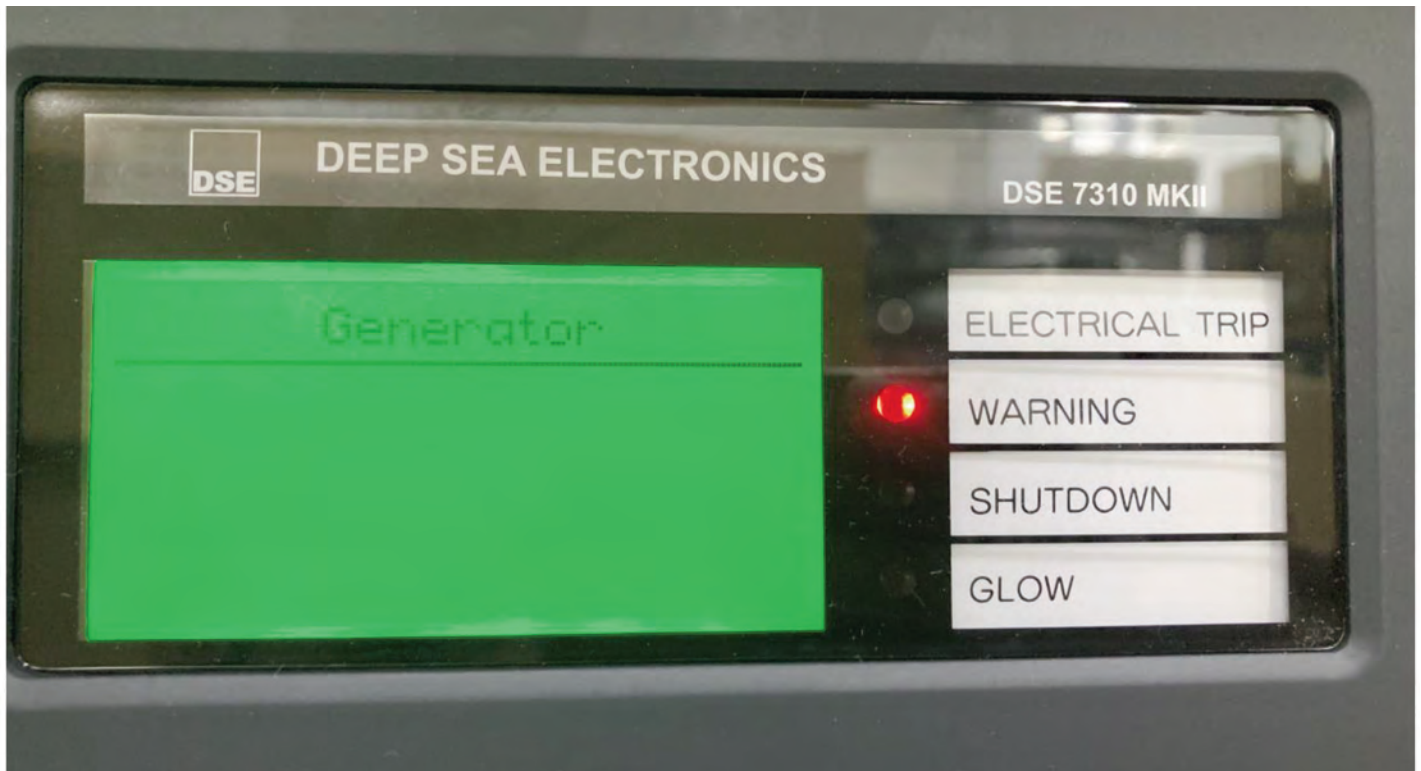
Engine Tab

- RPMs (Engine speed in revolutions per minute)
- Oil Pressure (Bar / PSI / kPa)
- Coolant Temperature (°F / °C)
- Battery Voltage (V)
- **Runtime*** (Unit hours & minutes w/start count)
- Fuel Level (%) and Temperature (°F / °C)
- Inlet Temperature (°F / °C)
- Turbo Pressure (Bar / PSI / kPa)

* Divide runtime by kWh to get average kW load.

SECTION 3 - REVIEWING THE CONTROL SCREENS

DSE Deep Sea Control



Generator Tab

- Voltage (L-N & L-L voltage readings)
- Hertz Frequency (Hz, Engine speed)
- Current Load / Amperage Draw
- **Load*** (kW on each line)
- Load (% of the generators total load)

* Divide runtime by kWh to get average kW load.

SECTION 3 - REVIEWING THE CONTROL SCREENS

DSE Deep Sea Control

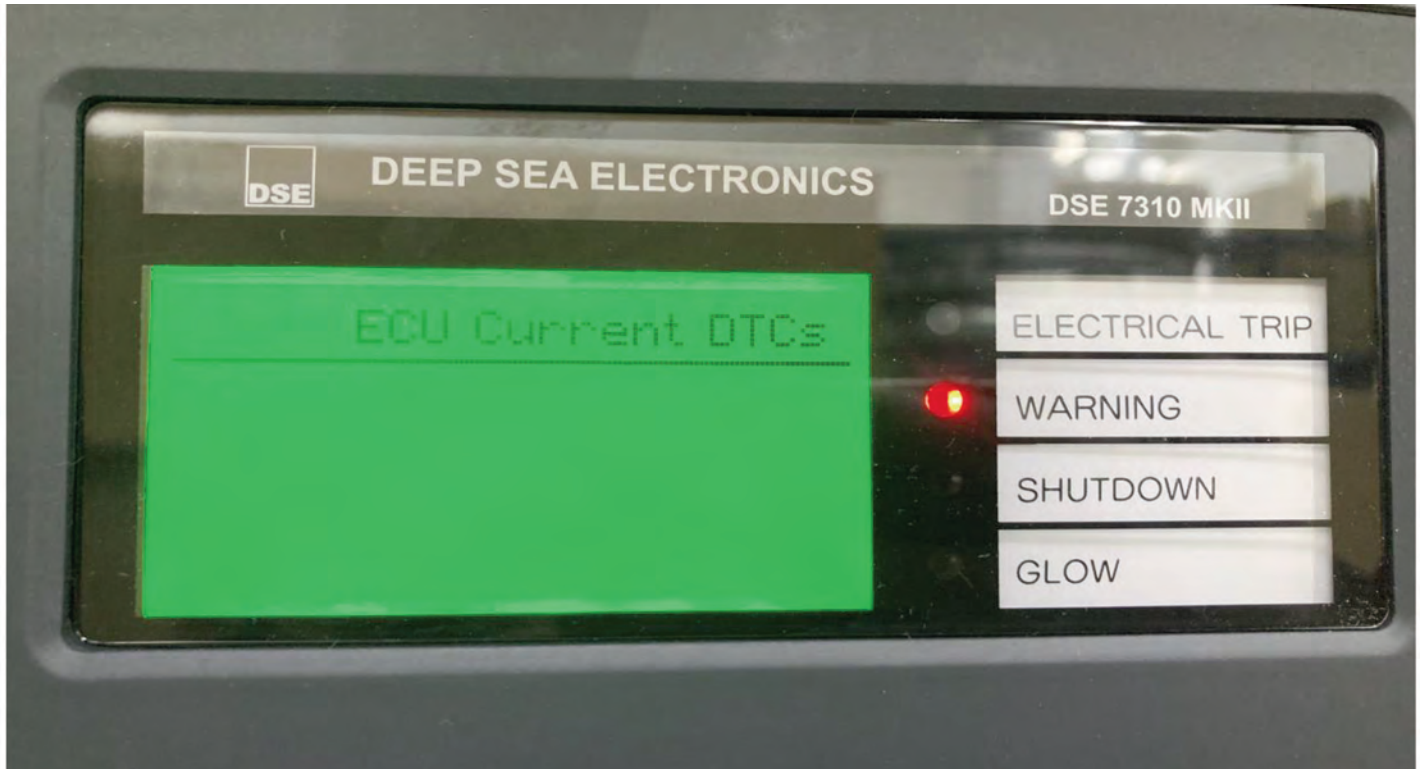


Alarms Tab

- This screen will display any alarms that the controller is recognizing at any moment.
- These are only WARNINGS and should not be confused with Diagnostic Trouble Code (DTC) or Suspect Parameter Number (SPN). They have their own dedicated screen.

SECTION 3 - REVIEWING THE CONTROL SCREENS

DSE Deep Sea Control

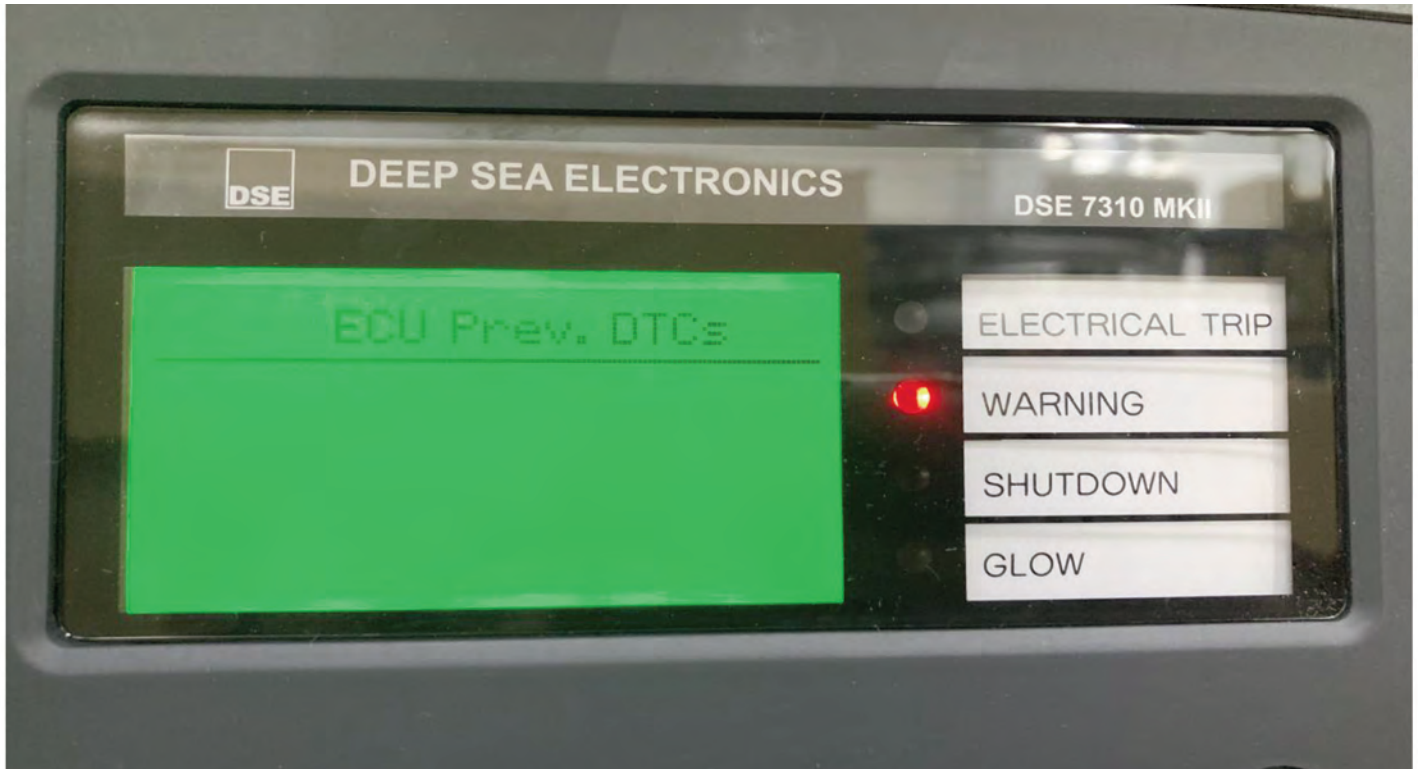


ECU Current DTCs Tab

- This screen will display any Current / Active Diagnostic Trouble Codes that the controller is recognizing from the ECU.
- The description will be in the form of a Suspect Parameter Number (SPN).

SECTION 3 - REVIEWING THE CONTROL SCREENS

DSE Deep Sea Control



ECU Prev. DTCs Tab

- This screen will display any Previous / Past Diagnostic Trouble Codes that the controller had recognized from the ECU.
- The description will be in the form of a Suspect Parameter Number (SPN).

SECTION 3 - REVIEWING THE CONTROL SCREENS

DSE Deep Sea Control



Event Log Tab

- This screen will display all logged events, including: all starts / stops, alarms with runtime, codes with runtime and emergency shutdowns.
- This will record every event that is logged into the controller. 250 events will be stored on the controller at any time. All other events will be accessible via Configuration Suite.
- **NOTE:** This is a great resource to learn about the behavior of the generator when you arrive on a jobsite for a repair or after the unit is returned from a rental.

SECTION 4 - ESCAPE MODE

DSE Deep Sea Control

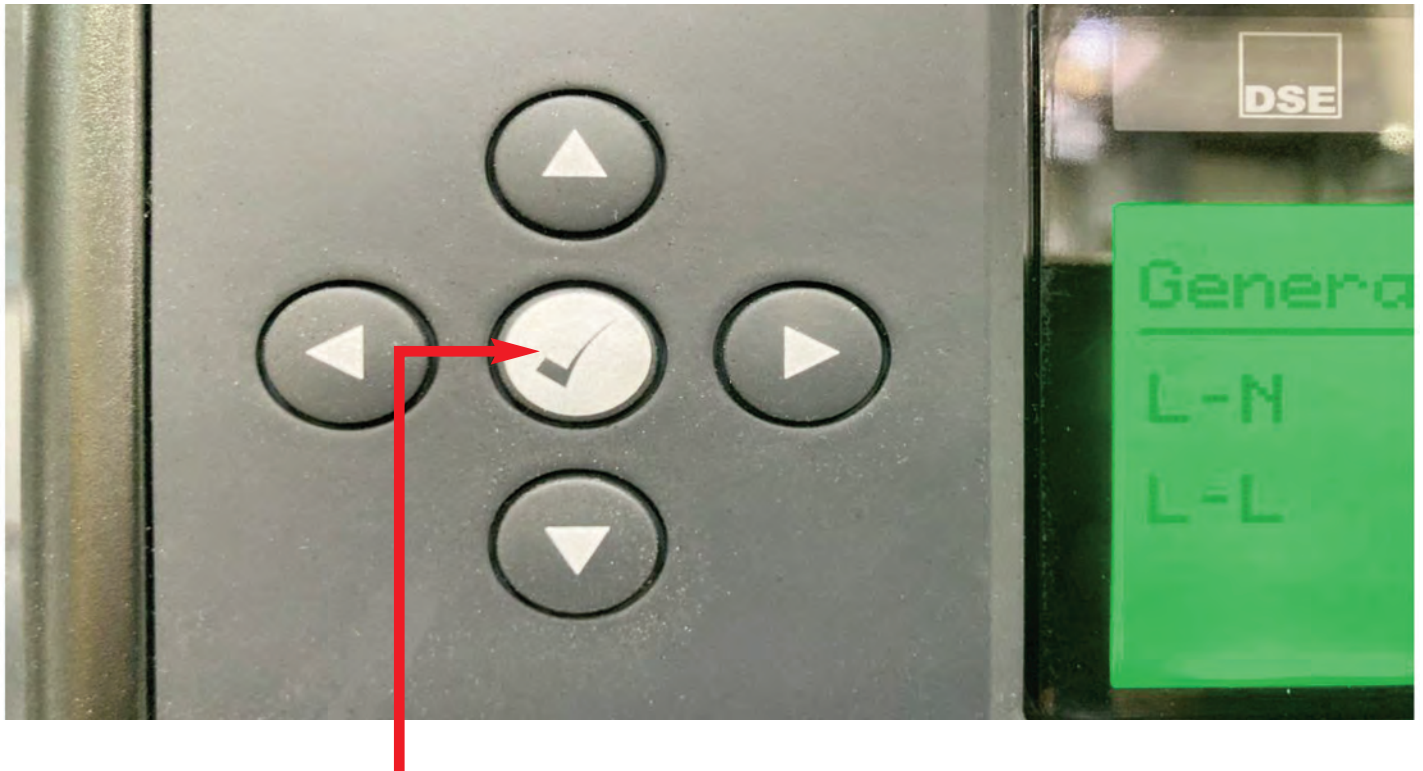


Editor Tab

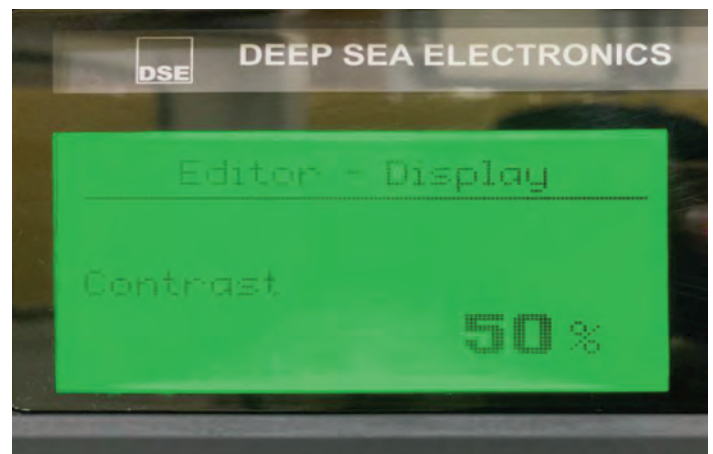
- Escape Mode can be accessed via the Editor tab on the Deep Sea controller for SDG65 - SDG400 generator models.
- Escape Mode allows for 20-30 minutes of shut down by-pass runtime so the engine may run. This will allow you to perform any test or verify repairs due to shut down errors / codes. SCR related codes are common shut-down codes.
- If the unit does not run in this mode, the unit is locked and needs to be serviced or repaired at the Engine Manufacturer's Service Center.

SECTION 4 - ESCAPE MODE

DSE Deep Sea Control

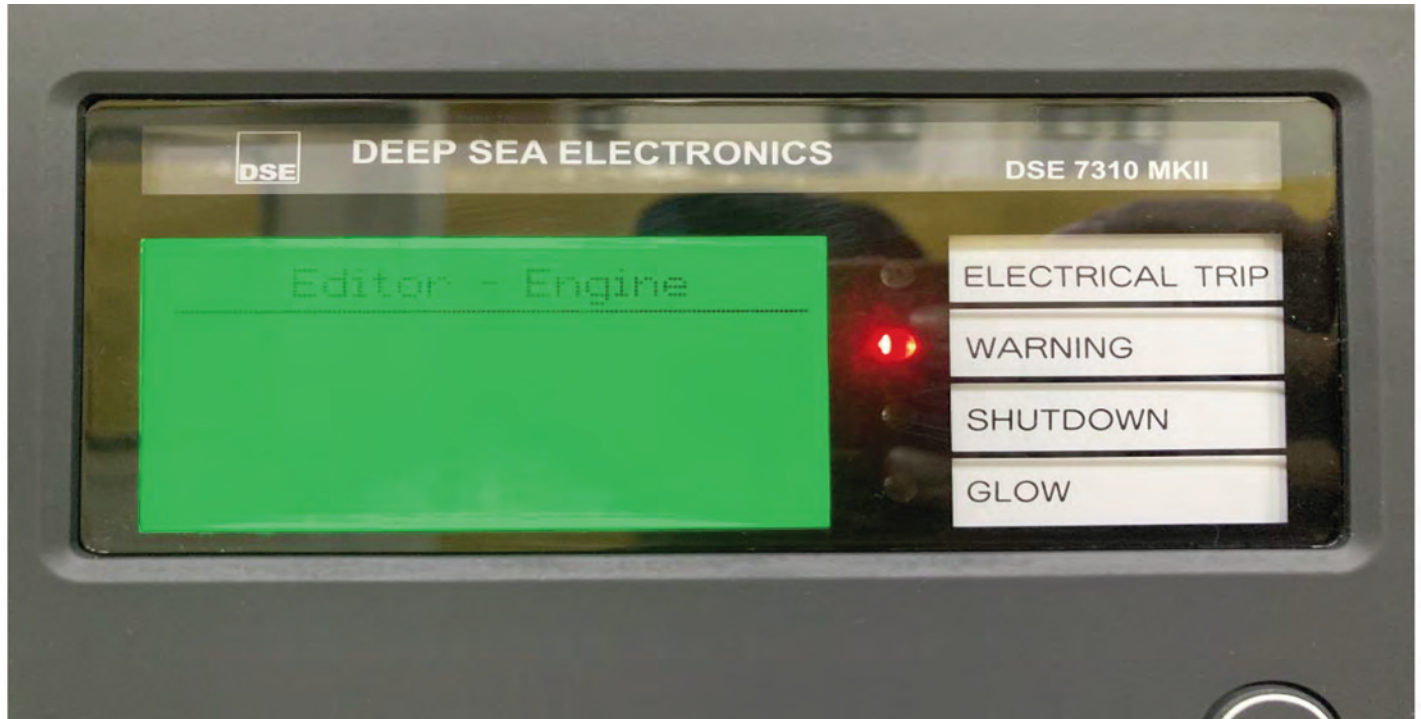


To activate Escape Mode, press and hold the **Check Mark** button for up to 5 seconds until you see the **Editor – Display** tab.



SECTION 4 - ESCAPE MODE

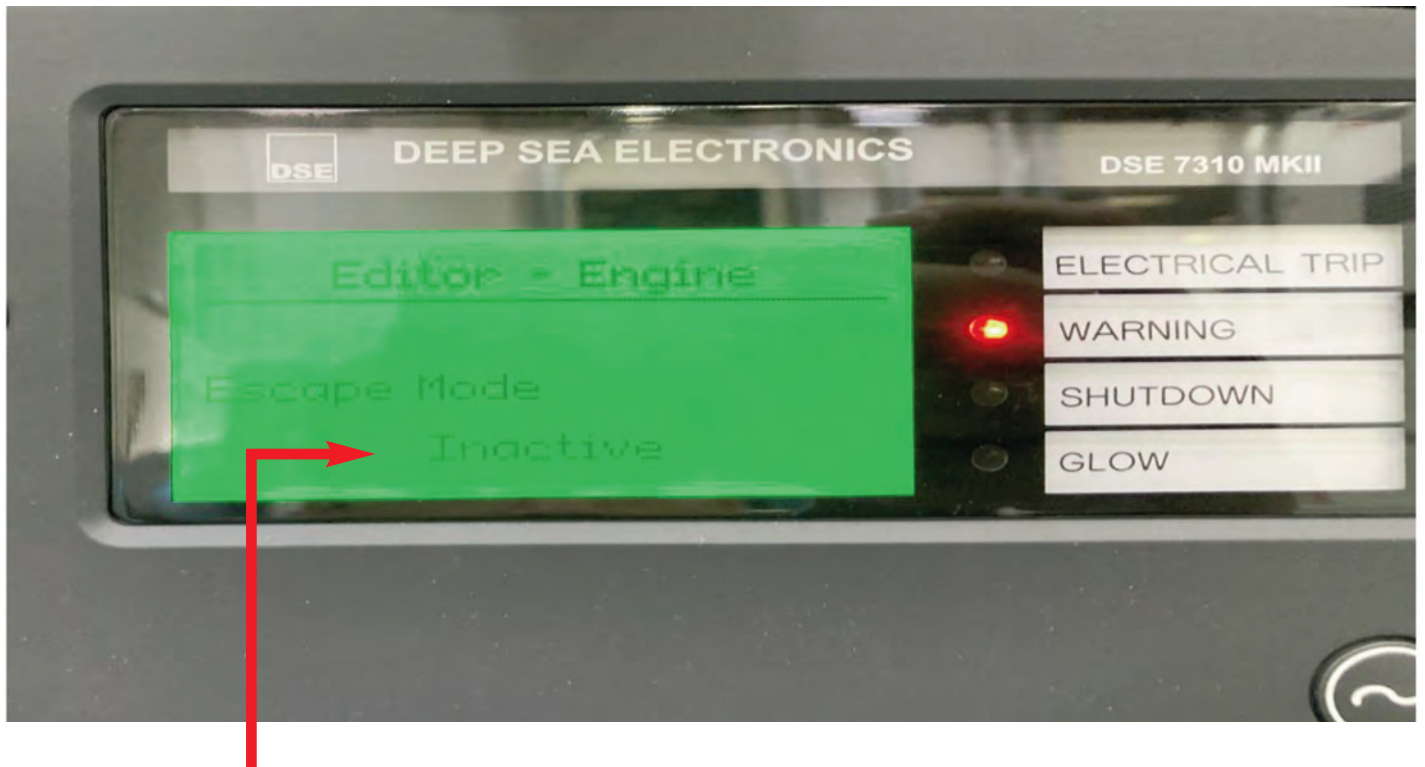
DSE Deep Sea Control



From the Editor display screen, use the **Right Arrow** button to get to the Editor – Engine tab.

SECTION 4 - ESCAPE MODE

DSE Deep Sea Control

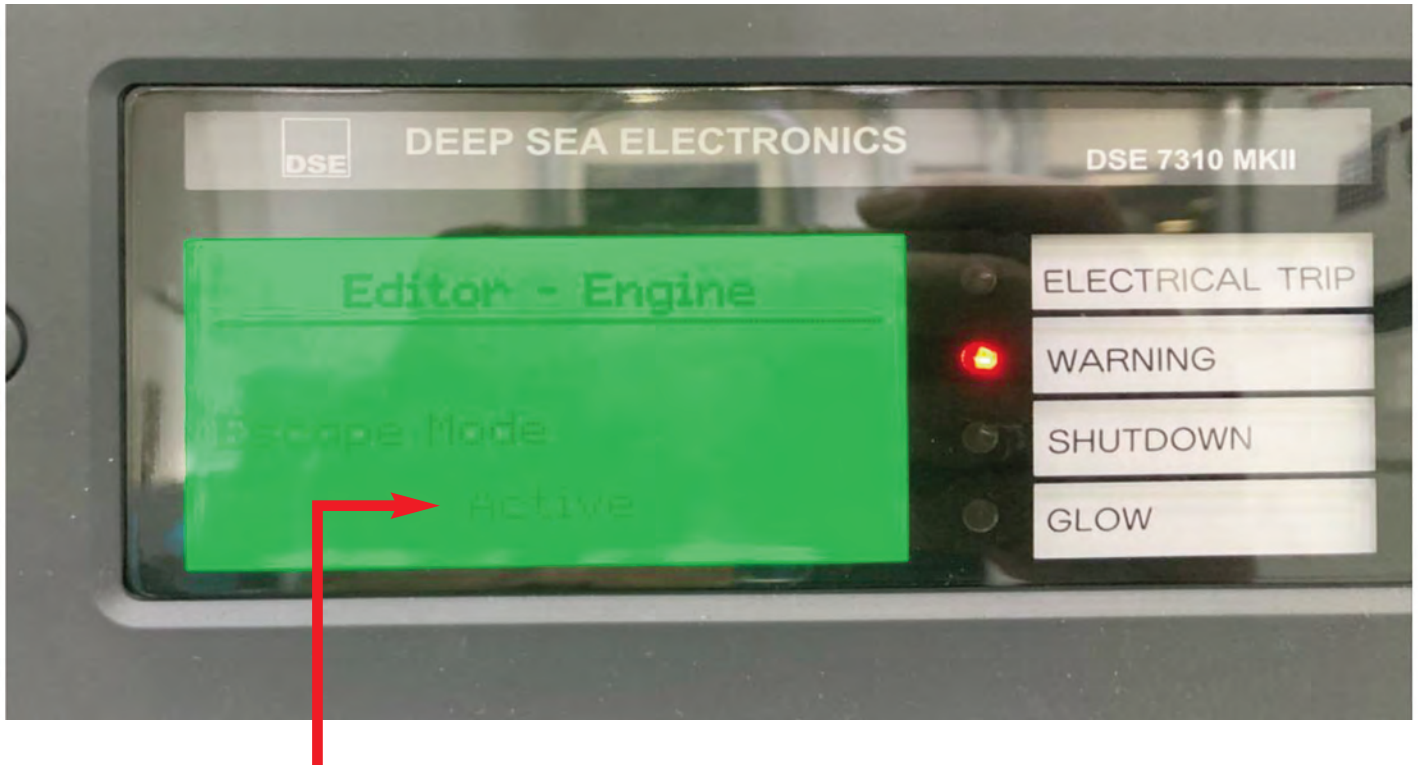


Next, use the **Down Arrow** button to scroll down until you reach **Escape Mode**.

Escape Mode should be in an “Inactive” state.

SECTION 4 - ESCAPE MODE

DSE Deep Sea Control

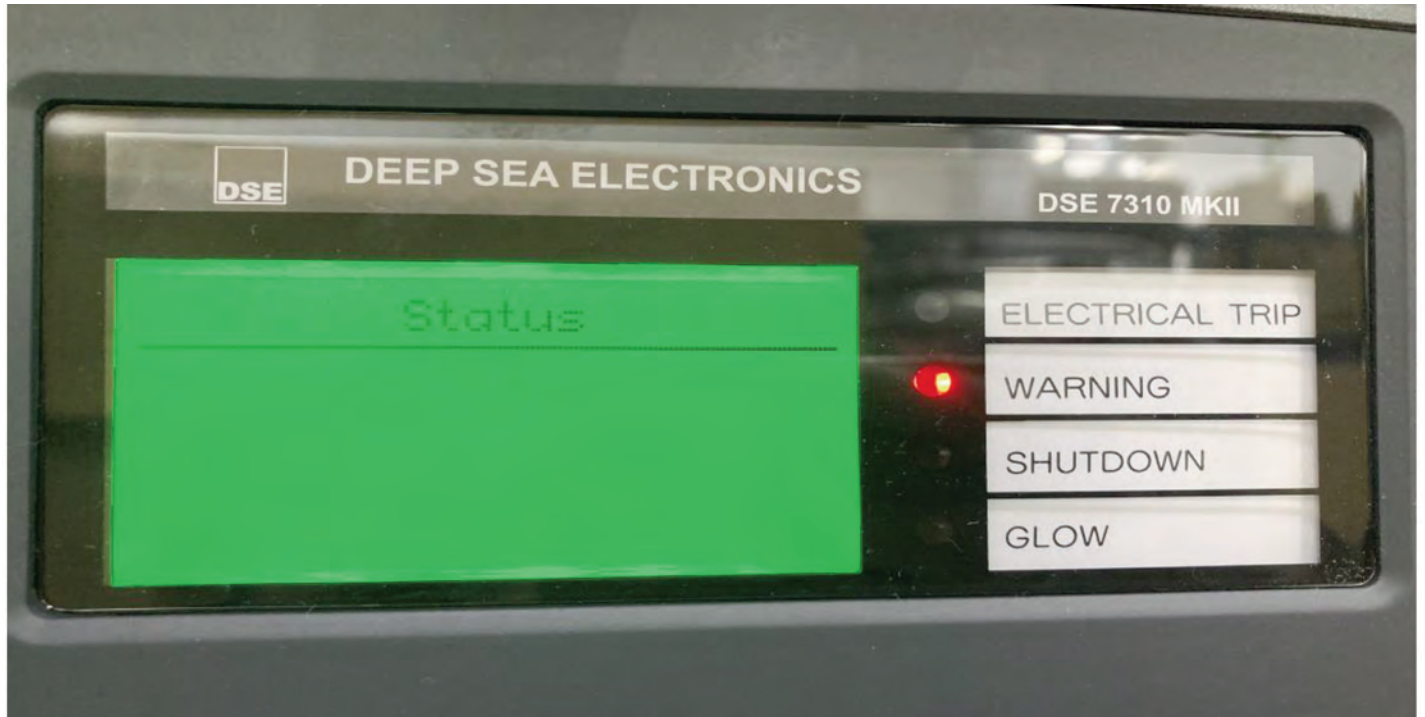


Press the **Check Mark** button to change “Inactive” to “Active.”

Then, press the **Check Mark** button again to stop the “Active” state from flashing.

SECTION 4 - ESCAPE MODE

DSE Deep Sea Control



Press and hold the **Check Mark** button for up to five (5) seconds to save your current settings.

When the **Status** tab appears, you are now in **Escape Mode** and ready for testing.