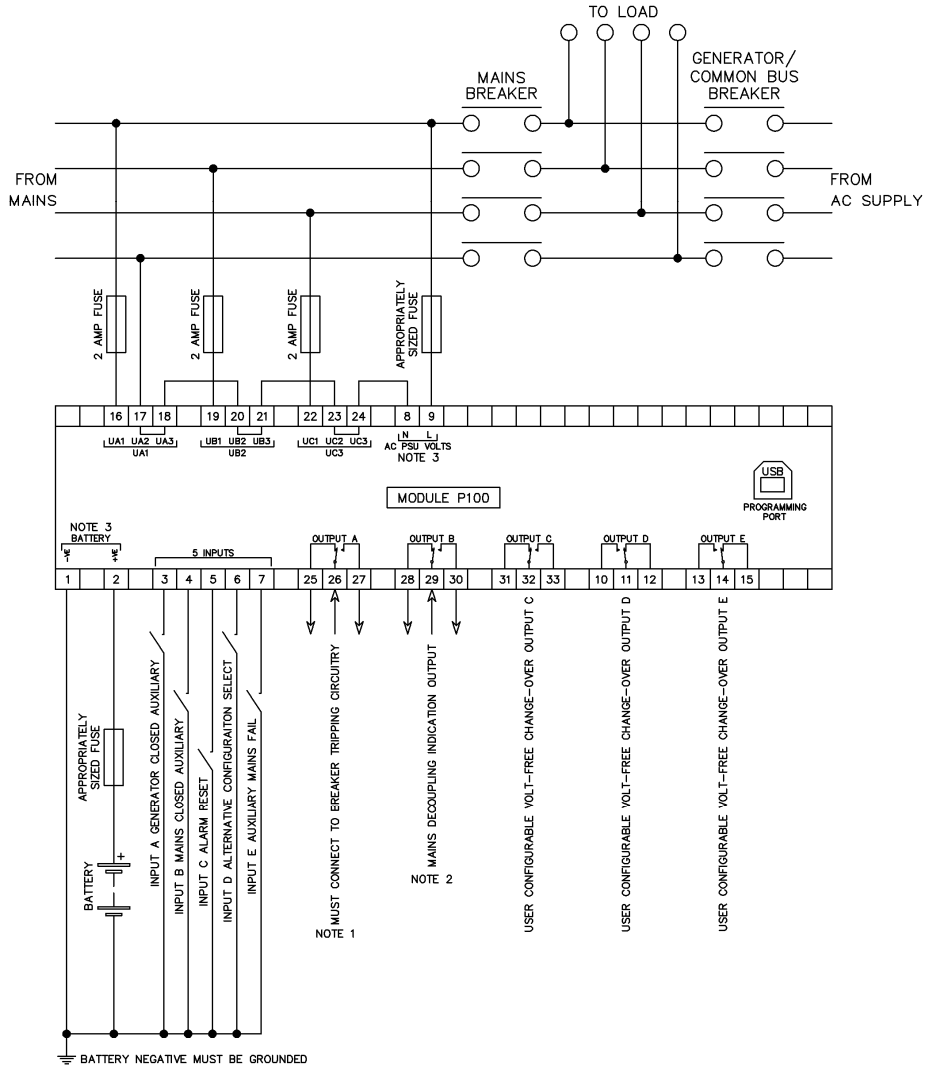
TYPICAL WIRING DIAGRAM



NOTE 1
DEPENDING UPON APPLICATION, ONE OR MORE BREAKERS WILL NEED TO BE TRIPPED IN CASE OF MAINS FAILURE.

NOTE 2
IT IS RECOMMENDED THAT THE MAINS DECOUPLING INDICATION OUTPUT IS GIVEN TO ANY OTHER DEVICE THAT HAS CONTROL OVER THE BREAKER BEING TRIPPED.

NOTE 3
THE MODULE CAN BE POWERED BY AC OR DC. CONNECTING BOTH WILL NOT DAMAMGE THE MODULE.

DEEP SEA ELECTRONICS

053-149
ISSUE 6

DSEP100 Installation Instructions

DSEP100 is used to detect mains failure when in parallel and disconnect the mains supply from the local supply in line with common international requirements.

Typical applications able to benefit from DSEP100 are:

- *Peak Lopping*
- *Fixed Export*
- *Short Term Operating Reserve (STOR)*
- *No Break, Seamless Or Closed Transition*
- *Commercial And Domestic Local Power Generation.*

The DSEP100 is intended to be placed into the application wiring in such a way as to decouple the mains and generator supplies in case of a mains failure when in parallel. Depending upon the requirements of the system and countries legislations, the relay is used to open the mains breaker, generator breaker or both.

The two available variants of the DSEP100 are:

- **DSEP100-01:** Compliant with Engineering Recommendation G99 Issue 1. Frequency and Loss of Mains settings are not factory locked.
- **DSEP100-02:** Compliant with Engineering Recommendation G99 Issue 1. Frequency and Loss of Mains settings are factory locked in compliance with clause 10.1.4 for a fully type-tested relay.

ELECTRICAL SPECIFICATIONS

Parameter	Specification
DC Supply Voltage	8 V_{DC} to 35 V_{DC}
AC Supply Voltage	85 V_{AC} to 305 V_{AC}
AC Supply Frequency	45 Hz to 65 Hz
Mains Phase to Neutral Voltage Sensing	15 V_{AC} to 333 V_{AC}
Mains Phase to Phase Voltage Sensing	26 V_{AC} to 576 V_{AC}
Mains Voltage Sensing Offset from Earth	230 V_{AC}
Volt-Free Output Rating	8 A at 250 V_{AC}, 5 A at 30 V_{DC}

DIMENSIONS AND MOUNTING

Parameter	Specification
Dimensions	157 mm X 105 mm X 67 mm (6.18 " X 4.13 " X 2.64 ")
Mounting Type	DIN rail or chassis mounting
DIN Rail Width	EN 50022: 35 mm (1.4 ")
Mounting Holes	M4 (0.25 ")
Mounting Hole Centres	146 mm X 94 mm (5.75 " X 3.70 ")
Weight	380 g (13.4 oz)

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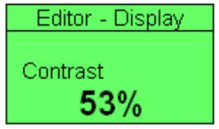
NOTE: A means of attaching a small padlock or utility company seal is provided. When attached, this prevents the settings being changed either from the Main Configuration Editor or via Configuration Suite PC Software.

NOTE: A select number of parameters on the DSEP100-02 are locked and cannot be adjusted for G99, clause 10.1.4 for a fully type-tested relay.

ACCESSING THE MAIN FRONT PANEL EDITOR

- Press the ***Tick*** and ***Reset*** buttons simultaneously to enter the main configuration editor. This is not possible if the *Configuration Lock* is active.
- If a module security PIN has been set, the PIN number request is then shown:

- The first '#' changes to '0'. Press the ***Up*** or ***Down*** buttons to adjust it to the correct value.
- Press the ***Right*** 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 ***Left*** 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.
- Press the ***Right*** or ***Left*** 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 ***Up*** or ***Down*** 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.
- Press and hold the ***Reset*** button to exit the editor without saving changes.
- Press and hold the ***Tick*** button to exit the editor and save the changes.

NOTE: The editor is exited after 5 minutes of inactivity to ensure security.

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

MAIN CONFIGURATION EDITOR PARAMETERS

Section	Parameter	Value	P100-02
Display	Contrast	0%	
	Language	English, others.	
	Current Date And Time	dd mmm yyyy, hh:mm:ss	
Config	Config To Edit	Default Config / Alternative Config	
Mains	Display Volts as PhPh	Active / Inactive	
	Nominal Voltage	0.0 V	
	Under Voltage Stage 1	Active / Inactive	
	Under Voltage Stage 1	0.0 V	
	Under Voltage Stage 2	Active / Inactive	
	Under Voltage Stage 2	0.0 V	
	Under Voltage Stage 3	Active / Inactive	
	Under Voltage Stage 3	0.0 V	
	Under Voltage Stage 4	Active / Inactive	
	Under Voltage Stage 4	0.0 V	
	Under Voltage Stage 5	Active / Inactive	
	Under Voltage Stage 5	0.0 V	
	Over Voltage Stage 1	Active / Inactive	
	Over Voltage Stage 1	0.0 V	
	Over Voltage Stage 2	Active / Inactive	
	Over Voltage Stage 2	0.0 V	
	Over Voltage Stage 3	Active / Inactive	
	Over Voltage Stage 3	0.0 V	
	Over Voltage Stage 4	Active / Inactive	
	Over Voltage Stage 4	0.0 V	
	Over Voltage Stage 5	Active / Inactive	
	Over Voltage Stage 5	0.0 V	
	High Average Voltage	Active / Inactive	
	High Average Voltage	0.0 V	
	Nominal Frequency	0.00 Hz	
	Under Frequency Stage 1	Active / Inactive	
	Under Frequency Stage 1	0.00 Hz	
	Under Frequency Stage 2	Active / Inactive	
	Under Frequency Stage 2	0.00 Hz	
	Over Frequency Stage 1	Active / Inactive	
	Over Frequency Stage 1 Trip	0.00 Hz	
	Over Frequency Stage 1 Return	0.00 Hz	
	Over Frequency Stage 2	Active / Inactive	
	Over Frequency Stage 2	0.00 Hz	
	Mains ROCOF Stage 1	Active / Inactive	
	Mains ROCOF Stage 1 Hz/S	0.000 Hz	
	Mains ROCOF Stage 2	Active / Inactive	
	Mains ROCOF Stage 2 Hz/S	0.000 Hz	
	Mains ROCOF Stage 3	Active / Inactive	
	Mains ROCOF Stage 3 Hz/S	0.000 Hz	
	Mains ROCOF Cycles	0	
	Mains Vector Shift	Active / Inactive	
	Main Vector Shift	0.0 °	
	Over Zero Seq Volts	Active / Inactive	
	Over Zero Seq Volts	0.0 V	
	Under Positive Seq Volts	Active / Inactive	
	Over Zero Seq Volts	Active / Inactive	
	Over Zero Seq Volts	0.0 V	
	Under Positive Seq Volts	Active / Inactive	
	Under Positive Seq Volts	0.0 V	
	Over Negative Seq Volts	Active / Inactive	
	Over Negative Seq Volts	0.0 V	
	Asymmetry High	Active / Inactive	
	Asymmetry High	0.0 V	
Mains Cont.	Phase Rotation Wrong	Active / Inactive	
	Auto-Reset	Active / Inactive	
	Reset If Unhealthy	Active / Inactive	
	Manual Reset If Unhealthy	Active / Inactive	
	Fast Reset	Active / Inactive	
	Boot In Tripped Mode	Active / Inactive	
	Standard Compliance	G59/2 / G59/3 and G99	
	Breaker Failed to Open	Active / Inactive	
	Use Gen Closed Auxiliary	Active / Inactive	
Timers	LCD Page Timer	0 h 0 m 0 s	
	Scroll Delay	0 h 0 m 0 s	
	Under Voltage Stage 1	0.0 s	
	Under Voltage Stage 2	0.0 s	
	Under Voltage Stage 3	0.0 s	
	Under Voltage Stage 4	0.0 s	
	Under Voltage Stage 5	0.0 s	
	Over Voltage Stage 1	0.0 s	
	Over Voltage Stage 2	0.0 s	
	Over Voltage Stage 3	0.0 s	
	Over Voltage Stage 4	0.0 s	
	Over Voltage Stage 5	0.0 s	
	Under Frequency Stage 1	0.0 s	
	Under Frequency Stage 2	0.0 s	
	Over Frequency Stage 1	0 m 0.0 s	
	Over Frequency Stage 2	0.0 s	
	Mains ROCOF Delay Stage 1	0.0 s	
	Mains ROCOF Delay Stage 2	0.0 s	
	Mains ROCOF Delay Stage 3	0.0 s	
	Over Zero Seq Volts Delay	0 m 0.0 s	
	Under Positive Seq Volts Delay	0 m 0.0 s	
	Over Negative Seq Volts Delay	0 m 0.0 s	
	Asymmetry High Delay	0 m 0.0 s	
	Auto-Reset Delay	0 h 0 m 0.0 s	
	Fast Reset Window	0.0 s	
	Fast Reset Delay	0.0 s	
	Supervision Delay	0 h 0 m 0.0 s	
	Breaker Failed to Open	0.0 s	
	Delayed Fault Reset Delay	0.00 s	
	Delayed Fault Reset Pulse Length	0.00 s	

ACCESSING THE DISPLAY CONFIGURATION EDITOR

- Press and hold the ***Tick*** button to access the *Display Editor*.

DISPLAY CONFIGURATION EDITOR PARAMETERS

Section	Parameter	Value	P100-02
Display	Contrast	0 %	
	Language	English	