



**DSEPOWER<sup>®</sup>**

# **DSE7570**

## **REMOTE SYNC LOCK CONTROLLER**

### **FEATURES**



Document Number 057-133

Author: Tony Manton



Deep Sea Electronics Plc  
Highfield House  
Hunmanby  
North Yorkshire  
YO14 0PH  
ENGLAND

Sales Tel: +44 (0) 1723 890099  
Sales Fax: +44 (0) 1723 893303

E-mail: [sales@deepseapl.com](mailto:sales@deepseapl.com)  
Website: [www.deepseapl.com](http://www.deepseapl.com)

**DSE Model 7570 operator manual**

© Deep Sea Electronics Plc  
All rights reserved. No part of this publication may be reproduced in any material form (including photocopying or storing in any medium by electronic means or other) without the written permission of the copyright holder except in accordance with the provisions of the Copyright, Designs and Patents Act 1988.  
Applications for the copyright holder's written permission to reproduce any part of this publication should be addressed to Deep Sea Electronics Plc at the address above.

The DSE logo and the names DSEUltra, DSEControl, DSEPower, DSEExtra, DSEMarine and DSENet are UK registered trademarks of Deep Sea Electronics PLC.




Any reference to trademarked product names used within this publication is owned by their respective companies.

Deep Sea Electronics Plc reserves the right to change the contents of this document without prior notice.

**Amendments since last publication**

Amd. No.	Comments

**Clarification of notation used within this publication.**

 <b>NOTE:</b>	Highlights an essential element of a procedure to ensure correctness.
 <b>CAUTION!</b>	Indicates a procedure or practice, which, if not strictly observed, could result in damage or destruction of equipment.
 <b>WARNING!</b>	Indicates a procedure or practice, which could result in injury to personnel or loss of life if not followed correctly.

## **TABLE OF CONTENTS**

<b>Section</b>	<b>Page</b>
<b>1 BIBLIOGRAPHY.....</b>	<b>4</b>
1.1 INSTALLATION INSTRUCTIONS.....	4
1.2 TRAINING GUIDES.....	4
1.3 MANUALS.....	4
<b>2 INTRODUCTION.....</b>	<b>5</b>
<b>3 DESCRIPTION OF CONTROLS.....</b>	<b>7</b>
3.1 VIEWING THE INSTRUMENTS.....	8
<b>4 OPERATION.....</b>	<b>9</b>
4.1 STARTING THE SYSTEM.....	9
4.2 FORWARD SYNC TO MAINS SUPPLY.....	9
4.3 PROCEED TO ISLAND OPERATION.....	10
4.4 BACK SYNC TO MAINS.....	10

# 1 BIBLIOGRAPHY

This document refers to and is referred to by the following DSE publications which can be obtained from the DSE website [www.deepseapl.com](http://www.deepseapl.com)

## 1.1 INSTALLATION INSTRUCTIONS

Installation instructions are supplied with the product in the box and are intended as a 'quick start' guide only.

DSE PART	DESCRIPTION
053-052	DSE7510 Installation Instructions

## 1.2 TRAINING GUIDES

Training Guides are produced to give 'handout' sheets on specific subjects during training sessions.

DSE PART	DESCRIPTION
056-047	Fail to close and out of sync

## 1.3 MANUALS

DSE PART	DESCRIPTION
057-088	DSE7510 Operator Manual
057-119	DSE7500 Series Configuration Software Manual

## 2 INTRODUCTION

This document details the installation and operation requirements of the DSE8680 bus tie controller, part of the DSEPower® range of products.

The manual forms part of the product and should be kept for the entire life of the product. If the product is passed or supplied to another party, ensure that this document is passed to them for reference purposes.

This is not a *controlled document*. You will not be automatically informed of updates. Any future updates of this document will be included on the DSE website at [www.deepseapl.com](http://www.deepseapl.com)

**DSE7570** controller is compatible with **DSE7510** generator controllers.

The DSE7570 Sync Lock Controller has been designed for manual connection and disconnection from the mains/utility supply.

The Sync Lock Controller provides a user friendly zero-sync/phase locking solution that is integrated easily with generators controlled by the DSE7510 Load Share module. With forward and backward synchronising with the mains/utility supply, the DSE7570 is ideal for temporary generator installations.

Where access is restricted, the DSE Sync Lock Interface is used to provide up to a maximum distance of 200 m between the DSE7570 Sync Lock Controller and the DSE7510 Load Share module.

Typical applications for the DSE7570 are:

- *Generator hire*
- *Local sub-station maintenance, service and repairs*
- *Emergency power provision*
- *Temporary power solutions*

The user also has the facility to view the system operating parameters via the LCD display.

The powerful ARM microprocessor contained within the module allows for incorporation of a range of complex features:

- *Text based LCD display (supporting multiple languages).*
- **True RMS** Voltage, Current and Power monitoring.
- *Fully configurable inputs for use as alarms or a range of different functions.*

Using a PC in conjunction with the DSE810 interface and 75xx Configuration software allows alteration of selected operational sequences, timers and alarms.

A robust plastic case houses the module. Connections are via locking plug and sockets.



### 3 DESCRIPTION OF CONTROLS

The following section details the function and meaning of the various controls and connections on the DSE7570 module.






Menu navigation buttons

Status and instrumentation display

Control buttons. See section entitled 'Operation' for details.

### 3.1 VIEWING THE INSTRUMENTS

It is possible to scroll to display the different pages of information by repeatedly operating the next

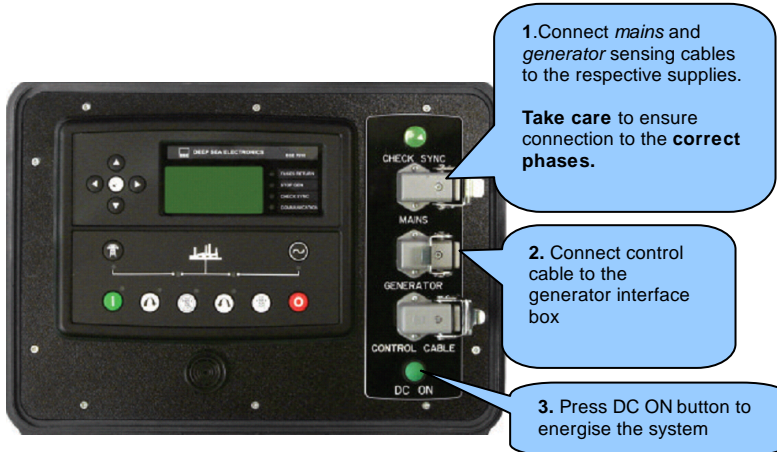
page  button.



## 4 OPERATION

**NOTE:-** The generator controller **MUST** be version 12.11 or above to provide the **Sync Lock** feature.

### 4.1 STARTING THE SYSTEM



To show correct connection of the system, the generator controller displays *Sync Lock* on it's screen.

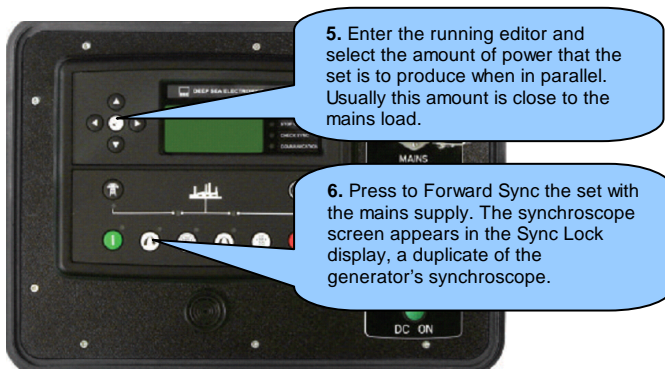


#### Trouble Shooting

Operation of the "Sync Lock" message and Communication LED along with placing the 7510 automatically into AUTO mode depends upon the following:

- 1) 7510 must be version 12.11 or above.
- 2) MSC link must be correctly connected and terminated with 120 ohm resistor at the 7510 end.
- 3) Control cable must be correctly connected to the 7570 sync lock device.
- 4) Any extension to the Control cable must be made in Belden 9843 cable. Any extension to the interface box connection to the 7510 MSC link must be made in Belden 9841 cable.

### 4.2 FORWARD SYNC TO MAINS SUPPLY

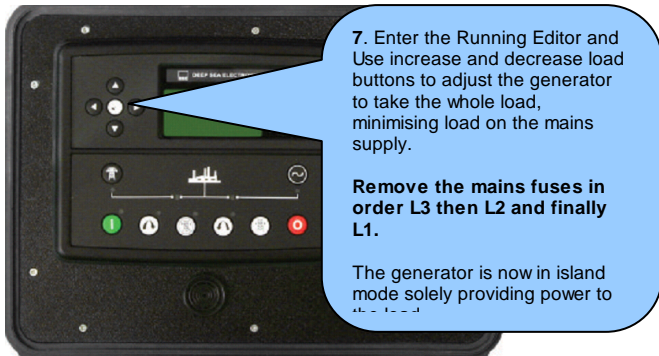


#### Trouble Shooting

Inability to sync with the mains supply could be caused by a number of possibilities:

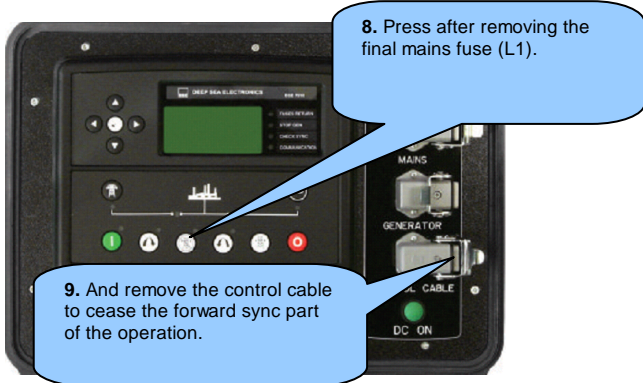
- 1) Measure the mains load first. Then set this amount (or a little below it) into the running editor of the system. This instructs the generator how much power to produce when it parallels with the mains supply.
- 2) Failure of the Control Cable connection to the MSC link of the 7510 controller.
- 3) Incorrect setup of the generator set / generator controller. See 'DSE Four Steps to Synchronising' for a checklist of items to test.
- 4) If the mains supply has varying frequency and/or voltage, the generator may be difficult to synchronise as it is trying to match a 'moving target'.

### 4.3 PROCEED TO ISLAND OPERATION

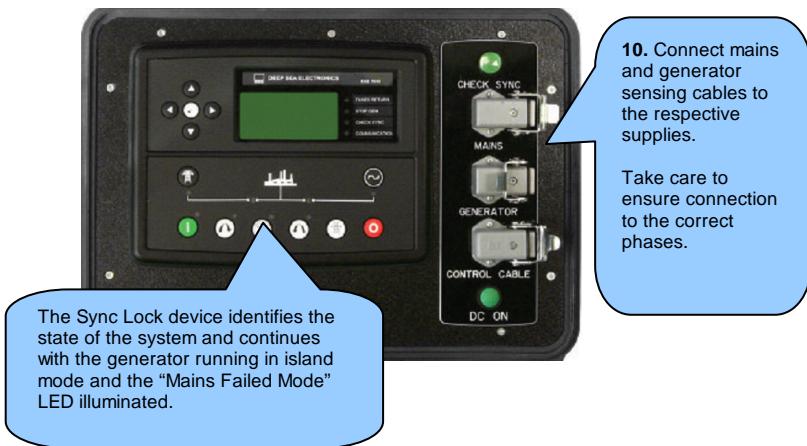


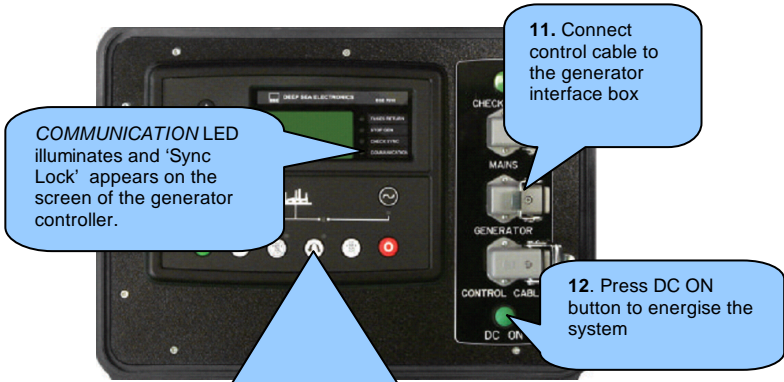
**Trouble Shooting**

- 1) Change the generator load power in small steps.
- 2) Take care not to place too much load on the generator. If you increase the load too far, excess power will be exported to the mains supply!
- 3) If the set is not instructed to take enough load, it will take a 'load hit' when the mains fuses are removed.
- 4) When you are happy that most of the load is being supplied by the generator, remove the fuses and move to island mode.



### 4.4 BACK SYNC TO MAINS





**Trouble Shooting**

Operation of the "Sync Lock" message and Communication LED along with placing the 7510 automatically into AUTO mode depends upon the following:

- 1) MSC link must be correctly connected and terminated with 120 ohm resistor at the 7510 end.
- 2) Control cable must be correctly connected to the 7570 sync lock device. Any extension to the Control cable must be made in Belden 9843 cable.
- 3) Any extension to the interface box connection to the 7510 MSC link must be made in Belden 9841 cable.

**13. Press** to begin the back sync operation, The Sync Lock device instructs the generator to synchronise with the mains supply and 'hold' the supplies in sync.

This operation will take a short while, the check sync lamp and audible sounder activate to show when the supplies are in sync.

Once held in sync, replace the mains fuses in order L1 then L2, then L3.

**Don't hesitate** during the fuse replacement and proceed to step 11 **immediately** after replacing the final fuse (L3)

