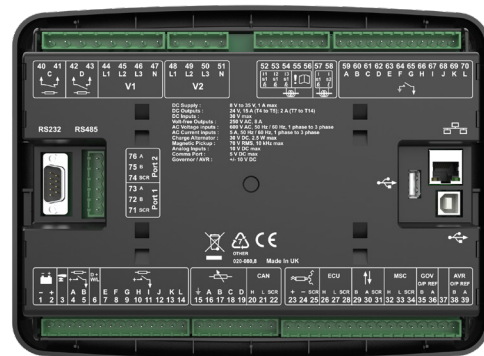


DSE8610 MKII Synchronising & Load Sharing Auto Start Control Module

Part Number: 8610-02



Overview

The **DSE8610 MKII** is a market-leading Synchronising Auto Start Control Module suitable for use in a multi-generator loadshare system, designed to synchronise up to 32 generators including electronic and non-electronic engines. The **DSE8610 MKII** monitors the generator and indicates operational status and fault conditions, automatically starting or stopping the engine on load demand or fault conditions.

System alarms are annunciated on the LCD screen (multiple language options available), illuminated LED and audible sounder. The event log records 250 events to facilitate easy maintenance, and an extensive number of fixed and flexible monitoring, metering and protection features are included. Designed to offer increased built in support for active sensors for 0 V to 10 V & 4 mA to 20 mA. Comprehensive communication and system expansion options are available.

Using the DSE PC Configuration Suite Software allows easy alteration of the operational sequences, timers and alarms. With all communication ports capable of being active at the same time, the **DSE8610 MKII** is ideal for a wide variety of demanding load share applications. The Advanced PLC tool within Configuration Suite provides users with an extremely powerful configuration tool for the most demanding applications.

Key Features

- Slip sync and dead bus synchronising control
- Multi-set communication (MSC) link with optional redundancy
- 3-phase generator and bus sensing with protection
- Latest ECU / ECM support for a wide range of engine manufacturers
- Integrated governor & AVR control
- Customisable shared data via MSC link
- Advanced PLC functionality including multi-purpose PIDs
- Flexible inputs and outputs
- DSENet® expansion support
- PC configuration using DSE Configuration Suite
- Multiple language support
- 4-line high-resolution display
- Manual front panel and automatic control modes
- Rubber sealing gasket (IP65 protection)
- Integrated RS232 and RS485 ports providing Modbus RTU support
- Integrated Ethernet port providing Modbus TCP and SNMP v2c support
- Data logging of up to 20 parameters

Product Documentation

053-182 – **DSE8610 MKII** Installation Instructions

057-254 – **DSE8610 MKII** Operator Manual

057-238 – **DSE8610 MKII** Configuration Suite PC Manual



DEEP SEA ELECTRONICS UK
T: +44 (0) 1723 890099
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS USA
T: +1 (815) 316 8706
E: usasales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS UAE
T: +971 (0) 45910819
E: uaesales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS INDIA
T: +91 20 68195900
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

Deep Sea Electronics Ltd maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

055-204/06/25 (4)

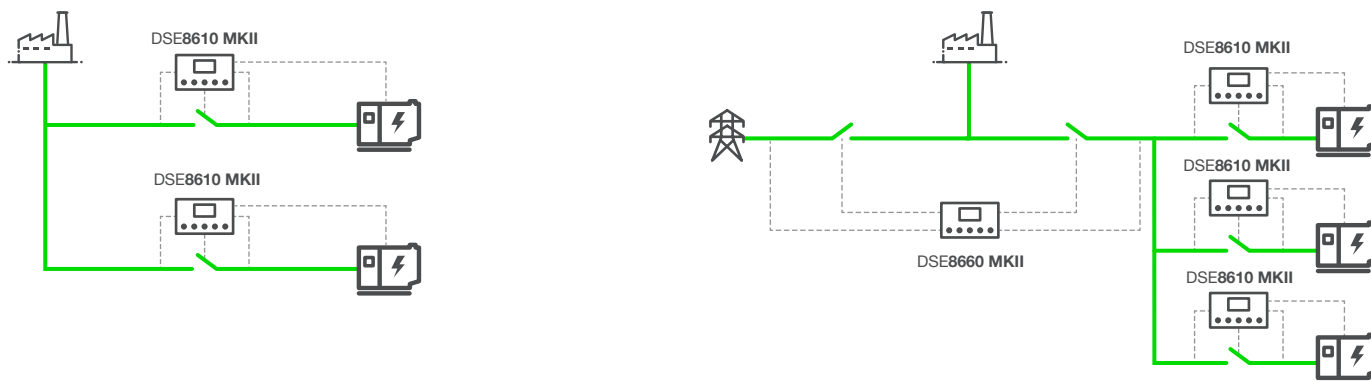
DSE8610 MKII Synchronising & Load Sharing Auto Start Control Module

Part Number: 8610-02

Multi-Set Controller Key Features

- Multiple generator synchronising and droop / isochronous load sharing control
- Advanced load demand schemes including automatic start / stop on load change, genset optimisation and balancing of engine hours
- Multiple mains (utility) and generator synchronising ATS with short / long-term parallel control*
- Mains (utility) failure detection including mains (utility) decoupling detection*
- Based load and peak lopping / shaving control*

Typical Applications



*When used with DSE8660 MKII controllers

Product Documentation

053-182 – DSE8610 MKII Installation Instructions

057-254 – DSE8610 MKII Operator Manual

057-238 – DSE8610 MKII Configuration Suite PC Manual



DEEP SEA ELECTRONICS UK
T: +44 (0) 1723 890099
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS USA
T: +1 (815) 316 8706
E: usasales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS UAE
T: +971 (0) 45910819
E: uaesales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS INDIA
T: +91 20 68195900
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

Deep Sea Electronics Ltd maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

055-204/06/25 (4)

DSE8610 MKII Synchronising & Load Sharing Auto Start Control Module

Part Number: 8610-02

Specifications	
DC Supply	
Continuous Voltage Rating	5 V to 35 V DC continuous
Cranking Dropouts	Able to survive 0 V for 100 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. Backlight will not be maintained during cranking.
Maximum Operating Current	530 mA at 12 V, 280 mA at 24 V
Maximum Standby Current	320 mA at 12 V, 160 mA at 24 V
Charge Alternator Excitation / Fail Range	0 V to 35 V
Voltage Measurement	
Number	2
Measurement Inputs	3 Phase + Neutral Generator and Bus
Voltage Range	15 V to 415 V Phase to Neutral 25 V to 720 V Phase to Phase
Frequency Range	3.5 Hz to 75 Hz
Current Transformer Measurement	
Number	4
Measurement Inputs	3 Phase Generator Current with Earth Fault Current
Current Range	0 A to 1 A 0 A to 5 A

Product Documentation

053-182 – DSE8610 MKII Installation Instructions

057-254 – DSE8610 MKII Operator Manual

057-238 – DSE8610 MKII Configuration Suite PC Manual



DEEP SEA ELECTRONICS UK
T: +44 (0) 1723 890099
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS USA
T: +1 (815) 316 8706
E: usasales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS UAE
T: +971 (0) 45910819
E: uaesales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS INDIA
T: +91 20 68195900
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

Deep Sea Electronics Ltd maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

055-204/06/25 (4)

DSE8610 MKII Synchronising & Load Sharing Auto Start Control Module

Part Number: 8610-02

Specifications	
Analogue Inputs	
Number	4
Type	Negative Switching Digital Input, Resistive Analogue Input, Current Analogue Input or Voltage Analogue Input
Digital Input Closed Voltage Threshold	Less than 2.1 V
Digital Input Open Voltage Threshold	Greater than 6.6 V
Resistive Analogue Measurement Range	Input A: 0 Ω to 240 Ω Input B to D: 0 Ω to 480 Ω
Current Analogue Measurement Range	0 mA to 20 mA
Voltage Analogue Measurement Range	0 V to 10 V
Analogue Resolution	1 %
Analogue Accuracy	2 %
Digital Inputs	
Number	12
Type	Negative Switching Digital Input
Closed Voltage Threshold	Less than 2.1 V
Open Voltage Threshold	Greater than 6.6 V
Emergency Stop Input	
Number	1
Type	Positive Switching Digital Input
Closed Voltage Threshold	Greater than 5.0 V
Open Voltage Threshold	Less than 3.0 V
Magnetic Pick-up Input	
Voltage Input Range	0.5 V _{Peak} to 70 V _{Peak}
Frequency Input Range	1 Hz to 10 kHz
Resolution	6.25 RPM
Accuracy	± 25 RPM

Product Documentation

053-182 – DSE8610 MKII Installation Instructions

057-254 – DSE8610 MKII Operator Manual

057-238 – DSE8610 MKII Configuration Suite PC Manual



DEEP SEA ELECTRONICS UK
T: +44 (0) 1723 890099
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS USA
T: +1 (815) 316 8706
E: usasales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS UAE
T: +971 (0) 45910819
E: uaesales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS INDIA
T: +91 20 68195900
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

Deep Sea Electronics Ltd maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

055-204/06/25 (4)

DSE8610 MKII Synchronising & Load Sharing Auto Start Control Module

Part Number: 8610-02

Specifications	
Analogue Outputs	
Number	2
Type	Voltage Analogue Output
Function	Governor and AVR control
Voltage Analogue Range	-5 V to 10 V
Analogue Resolution	1 %
Load Impedance	Minimum 500 Ω
Isolation	Governor: ± 1 kV AVR: ± 3 kV
Digital Outputs	
Number	12
Type	1 Normally Open Volt-Free Contacts 1 Normally Closed Volt-Free Contacts 10 Positive Switching DC Output
Volt-Free Contact Output Rating	5 A _{DC} resistive at 30 V _{DC} 8 A _{AC} resistive at 250 V _{AC}
Positive DC Output Rating	Output A to B (Fuel and Start): 15 A _{DC} at Emergency Stop input supply voltage Output E to L: 2 A _{DC} at module supply voltage

Product Documentation

053-182 – DSE8610 MKII Installation Instructions

057-254 – DSE8610 MKII Operator Manual

057-238 – DSE8610 MKII Configuration Suite PC Manual



DEEP SEA ELECTRONICS UK
T: +44 (0) 1723 890099
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS USA
T: +1 (815) 316 8706
E: usasales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS UAE
T: +971 (0) 45910819
E: uaesales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS INDIA
T: +91 20 68195900
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

Deep Sea Electronics Ltd maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

055-204/06/25 (4)

DSE8610 MKII Synchronising & Load Sharing Auto Start Control Module

Part Number: 8610-02

Specifications	
Communications	
USB A	1 Data Storage Port
USB B	1 Programming Port
DSENet®	1 Expansion Port
RS485	2 Fully Isolated RS485 Ports*
RS232	1 Modbus RTU Port
Ethernet	1 10/100 Ethernet Port
CAN	3 Fully Isolated CAN Ports ECU – Engine ECU/ECM MSC – MSC Link CAN – Redundant MSC Link
Temperature	
Operating Temperature	-30 °C to +70 °C / -22 °F to +158 °F
Storage Temperature	-40 °C to +85 °C / -40 °F to +185 °F
Dimensions	
Overall (W x H x D)	245 mm x 184 mm x 51 mm / 9.6 " x 7.2 " x 2.0 "
Mounting	
Type	Panel Fascia Mounting
Panel Cut-Out (W x H)	220 mm x 160 mm / 8.66 " x 6.3 "
Maximum Panel Thickness	8 mm / 0.31"

*Second RS485 port available in future update

Product Documentation

053-182 – DSE8610 MKII Installation Instructions

057-254 – DSE8610 MKII Operator Manual

057-238 – DSE8610 MKII Configuration Suite PC Manual



DEEP SEA ELECTRONICS UK
T: +44 (0) 1723 890099
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS USA
T: +1 (815) 316 8706
E: usasales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS UAE
T: +971 (0) 45910819
E: uaesales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS INDIA
T: +91 20 68195900
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

Deep Sea Electronics Ltd maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

055-204/06/25 (4)

DSE8610 MKII Synchronising & Load Sharing Auto Start Control Module

Part Number: 8610-02

Related Products		
DSEGenset®		
DSE8680	Synchronising Generator Bus Tie Control Module	8680-01
DSE8660 MKII	Auto Transfer Switch & Mains (Utility) Control Module	8660-02
DSE8003 MKII	7" Graphical Colour Multi-Set Remote Overview Display	8003-02
DSEG0123	Analogue Load Share Lines Interface	G0123-01
DSENet®		
DSE2548	DSENet® LED Output Expansion Module	2548-01
DSE2157	DSENet® Output Expansion Module	2157-01
DSE2152	DSENet® Analogue Output Expansion Module	2152-01
DSE2133	DSENet® RTD/Thermocouple Input Expansion Module	2133-01
DSE2131	DSENet® Ratiometric Input Expansion Module	2131-01
DSE2130	DSENet® Input Expansion Module	2130-01
DSEWebNet®		
DSE890 MKII	DSEWebNet® Gateway	0890-04
Remote Monitoring Control		
DSESCADA	DSE Paralleling SCADA	037-060
Accessories		
DSE2610	Remote Display Module for DSE8610 MKII	7410-01
DSE124	MSC and CANbus Extender	0124-01

Product Documentation

053-182 – DSE8610 MKII Installation Instructions

057-254 – DSE8610 MKII Operator Manual

057-238 – DSE8610 MKII Configuration Suite PC Manual



DEEP SEA ELECTRONICS UK
T: +44 (0) 1723 890099
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS USA
T: +1 (815) 316 8706
E: usasales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS UAE
T: +971 (0) 45910819
E: uaesales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS INDIA
T: +91 20 68195900
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

Deep Sea Electronics Ltd maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

055-204/06/25 (4)

DSE8610 MKII Synchronising & Load Sharing Auto Start Control Module

Part Number: 8610-02

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 61010	Safety requirements for electrical equipment for measurement, control and laboratory use
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 at ± 7.5 mm, 8 Hz to 500 Hz at 2 Gn
Humidity	
BS EN 60068-2-30	Db Damp Heat Cyclic 20/55 °C at 95% Relative Humidity 48 Hours
BS EN 60068-2-78	Cab Damp Heat Static 40 °C at 93% Relative Humidity 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 - From the front of the module when installed into a control panel with supplied gasket

Product Documentation

053-182 – DSE8610 MKII Installation Instructions

057-254 – DSE8610 MKII Operator Manual

057-238 – DSE8610 MKII Configuration Suite PC Manual



DEEP SEA ELECTRONICS UK
T: +44 (0) 1723 890099
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS USA
T: +1 (815) 316 8706
E: usasales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS UAE
T: +971 (0) 45910819
E: uaesales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS INDIA
T: +91 20 68195900
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

Deep Sea Electronics Ltd maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

055-204/06/25 (4)

DSE8610 MKII Synchronising & Load Sharing Auto Start Control Module

Part Number: 8610-02

Single-Set Controller	
Pin	Description
1 to 2	DC Supply
3	Emergency Stop
4	Fuel
5	Start
6	Charge Alternator
7 to 14	Digital Outputs
15 to 19	Analogue Inputs
20 to 22	Redundant MSC Link
23 to 25	Magnetic Pick-Up
26 to 28	Engine ECU/ECM
29 to 31	DSENet®
32 to 34	MSC Link
35 to 36	Governor Control
37	Not Applicable
38 to 39	AVR Control
40 to 41	Normally Closed Volt Free Output
42 to 43	Normally Open Volt Free Output
44 to 47	Generator Voltage Sensing
48 to 51	Bus Voltage Sensing
52 to 56	Generator Current Sensing
57 to 58	Not Applicable
59 to 70	Digital Inputs
71 to 76	2 x RS485*

*Second RS485 port available in future update

Product Documentation

053-182 – DSE8610 MKII Installation Instructions

057-254 – DSE8610 MKII Operator Manual

057-238 – DSE8610 MKII Configuration Suite PC Manual



DEEP SEA ELECTRONICS UK
T: +44 (0) 1723 890099
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS USA
T: +1 (815) 316 8706
E: usasales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS UAE
T: +971 (0) 45910819
E: uaesales@deepseaelectronics.com
W: www.deepseaelectronics.com

DEEP SEA ELECTRONICS INDIA
T: +91 20 68195900
E: sales@deepseaelectronics.com
W: www.deepseaelectronics.com

Deep Sea Electronics Ltd maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

055-204/06/25 (4)

055-204/06/25 (4)