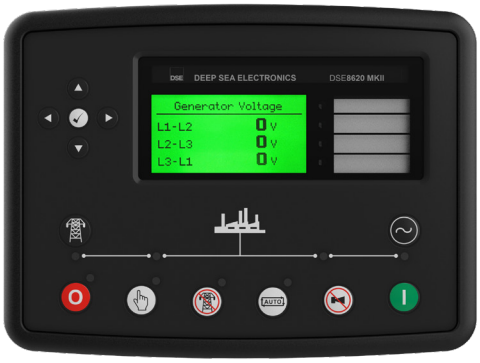
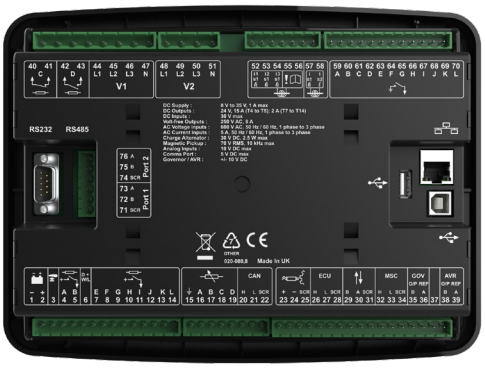
DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02





Overview

The DSE**8620 MKII** is a synchronising auto mains (utility) failure control module suitable for paralleling single gensets (diesel or gas) with the mains (utility) supply. The controller can be configured for use as a DSE**8610 MKII** auto start control module (multi-set). Designed to synchronise a single genset with a single mains (utility) supply, the DSE**8620 MKII** will automatically control the changeover from mains (utility) to generator supply or run the generator in synchronisation with the mains (utility) to provide no-break, peak lopping, and peak shaving power solutions.

System alarms are annunciated on the LCD screen (multiple language options available), illuminated LED, and audible sounder. Comprehensive communications are also available via RS232, RS485, and Ethernet for remote PC control, monitoring, and integration into building management systems. The event log will record 250 events to facilitate easy maintenance, and an extensive number of fixed and flexible monitoring, metering, and protection features are included.

Using the DSE PC Configuration Suite Software allows easy alteration of the operational sequences, timers and alarms.

Key Features

- 2 module applications in one product (single-set, multi-set)
- Comprehensive synchronising & loadsharing capabilities
- 3-phase generator and bus sensing with protection
- Latest ECU / ECM support for a wide range of engine manufacturers
- Integrated governor & AVR control
- PC configuration using DSE Configuration Suite
- PLC functionality
- Flexible inputs and outputs
- DSE**Net**® expansion support
- 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

053-183 – DSE**8620 MKII** Installation Instructions
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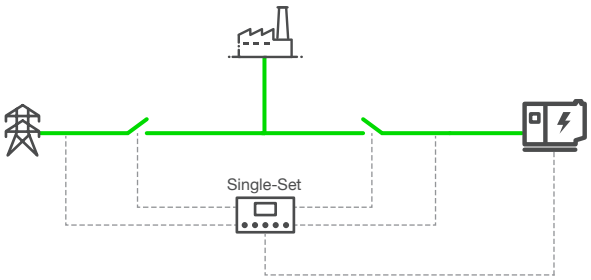
DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02

Single-Set Controller Key Features

- Single generator, single mains (utility), synchronising ATS with short / long-term parallel control
- 3 phase generator and mains (utility) sensing with protection
- Mains (utility) failure detection including mains (utility) decoupling detection
- Base load and peak lopping / shaving control
- Latest ECU / ECM support for a wide range of engine manufacturers
- Integrated Governor and AVR control
- Mains (utility) and generator positive, negative and zero voltage sequence alarms

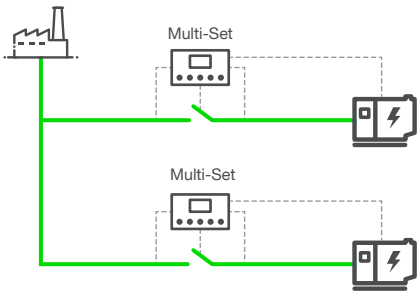
Typical Applications



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*
- Base load and peak lopping / shaving control*

Typical Applications



***When used with DSE8660 MKII controllers**

Product Documentation

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DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02

Specifications	
DC Supply	
Continuous Voltage Rating	8 V to 35 V 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	5
Measurement Inputs	3 Phase Generator Current with Earth Fault Current 3 Phase Generator Current with Earth Fault current and Single-Phase Mains Current
Current Range	0 A to 1 A 0 A to 5 A

Product Documentation

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DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02

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
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DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02

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

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DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02

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**
**** When converted to a DSE8610 MKII**

Product Documentation
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DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02

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		
DSE8005	SCADA Suite Software	8005-00
Accessories		
DSE124	MSC and CANbus Extender	0124-01

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DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02

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 60950	Safety of Information Technology Equipment, Including Electrical Business Equipment
Temperature	
BS EN 60068-2-1	Ab/Ae Cold Test -30 ºC
BS EN 60068-2-2	Bb/Be Dry Heat +70 ºC
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 ºC at 95% Relative Humidity 48 Hours
BS EN 60068-2-78	Cab Damp Heat Static 40 ºC 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

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DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02

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	CAN Port
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	Mains (Utility) Voltage Sensing
52 to 56	Generator Current Sensing
57 to 58	Mains (Utility) Current Sensing
59 to 70	Digital Inputs
71 to 76	2 x RS485*

***Second RS485 port available in future update**

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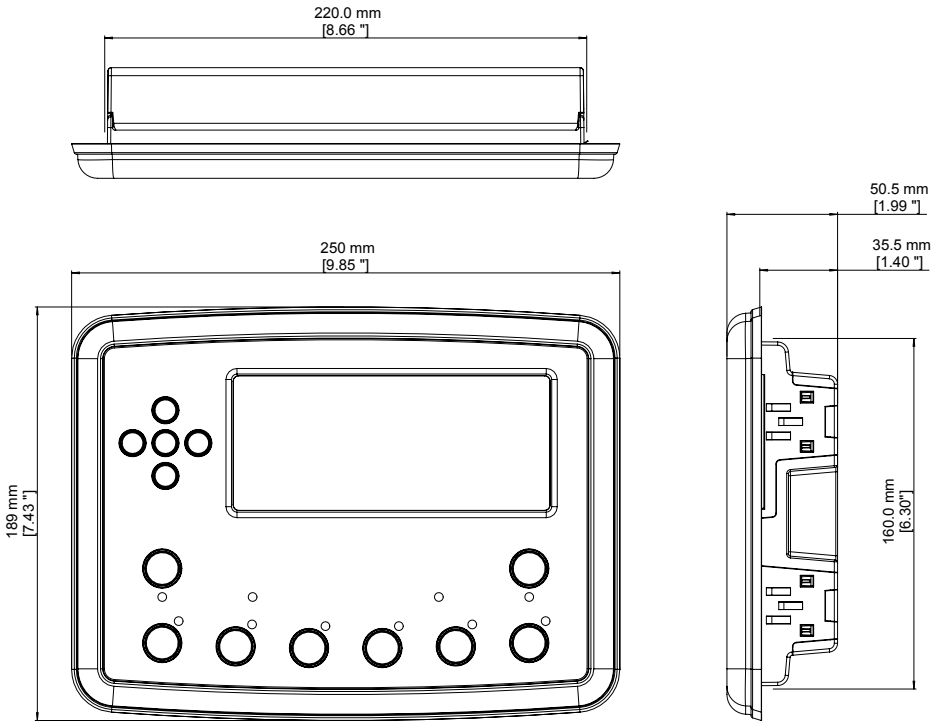
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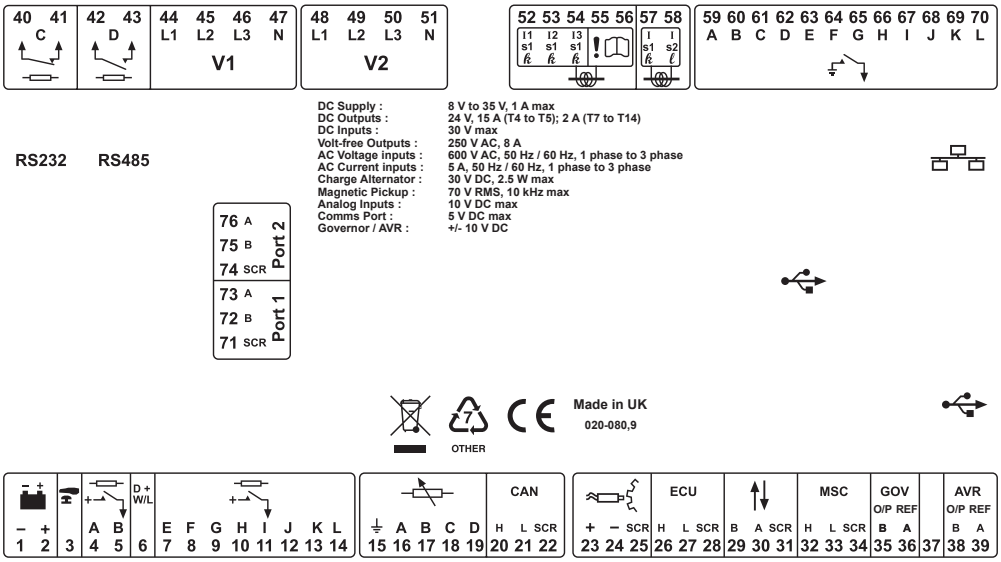
DSE**8620 MKII** Synchronising Auto Mains (Utility) Failure Load Share Control Module

Part Number: 8620-02

Technical Drawing



Connection Label



Refer to PIN out description charts for connection information on the operating mode controller is configured for.

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