

## DSE6110 MKIII Auto Start & DSE6120 MKIII Auto Mains (Utility) Failure Control Modules

Part Number: 6110-05 / 6120-05



DSE6110 MKIII

DSE6120 MKIII

### Overview

The DSE6110 MKIII is a auto start control module and the DSE6120 MKIII is a auto mains (utility) failure control module suitable for a wide variety of single, diesel or gas, gen-set applications. Monitoring an extensive number of engine parameters, the modules will display warnings, shutdown and engine status information on the back-lit LCD screen. The DSE6120 MKIII will also monitor the mains (utility) supply. The modules include a USB port as well as dedicated DSENet® terminals for system expansion.

Both modules are compatible with electronic (CAN) and non-electronic (magnetic pick-up/alternator sensing) engines and offer an extensive number of flexible inputs, outputs and engine protections so the system can be easily adapted to meet the most demanding industry requirements. The comprehensive list of features includes enhanced event and performance monitoring and PLC functionality.

The modules can be easily configured using the DSE Configuration Suite PC software. Selected front panel editing is also available.

### Common Key Features

- PLC functionality
- Flexible inputs and outputs
- DSENet® expansion support
- PC configuration using DSE Configuration Suite
- Multiple language support
- Enhanced 4-line text display
- Manual front panel and automatic control modes
- Latest ECU / ECM support for a wide range of engine manufacturers
- IP65 rating (with optional gasket) offers increased resistance to water ingress
- Multiple selectable configurations in one unit to suit changing requirements
- Customisable module power-up & screen saver screens

### Product Approvals

- + CE
- + UL Listed: Standard - UL 6200:2<sup>nd</sup> Edition

### Product Documentation

- 053-240 – DSE6110/20 MKIII Installation Instructions
- 057-289 – DSE6110/20 MKIII Operator Manual
- 057-290 – DSE6110/20 MKIII Configuration Suite PC Manual



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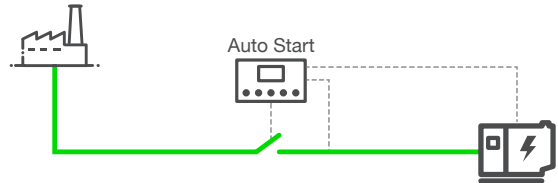
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### DSE6110 MKIII Auto Start Controller Key Features

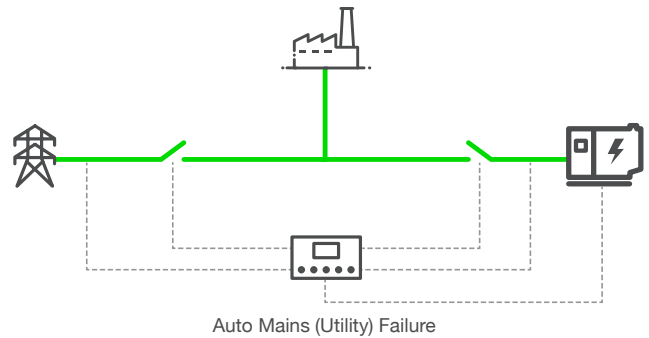
- 3 phase generator sensing with protection
- Manual starting / control by fascia button and automatic starting / control by inputs and other functions

### Typical Applications



### DSE6120 MKIII Auto Mains (Utility) Failure Controller Key Features

- 3 phase generator and mains (utility) sensing with protection
- Manual starting / control by fascia button and automatic starting / control by inputs and other functions.
- Automatic start and stopping of generator and transfer of load based on mains (utility) availability



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Part Number: 6110-05 / 6120-05

Specifications	
<b>DC Supply</b>	
Continuous Voltage Rating	8 V to 35 V DC continuous
Cranking Dropouts	Able to survive 0 V for 50 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	340 mA at 12 V, 160 mA at 24 V
Maximum Standby Current	160 mA at 12 V, 80 mA at 24 V
Charge Alternator Excitation / Fail Range	0 V to 35 V
<b>Voltage Measurement</b>	
Number	DSE6110 MKIII: 1 DSE6120 MKIII: 2
Measurement Inputs	3 Phase + Neutral DSE6110 MKIII: Generator DSE6120 MKIII: Generator and Mains (Utility)
Voltage Range	15 V to 415 V Phase to Neutral 25 V to 719 V Phase to Phase
Frequency Range	3.5 Hz to 75 Hz
Resolution	1 V
Accuracy	±1 %
<b>Current Measurement</b>	
Number	3
Measurement Inputs	3 Phase DSE6110 MKIII: Generator DSE6120 MKIII: Generator or Load
Current Range	0 A to 5 A
Resolution	25 mA
Accuracy	±1 %

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Specifications	
<b>Analogue Inputs</b>	
Number	4
Type	4 Negative Switching Digital Input 4 Resistive Analogue Input 2 Current Analogue Input 2 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	<b>Input A:</b> 0 Ω to 240 Ω <b>Input B to D:</b> 0 Ω to 3 kΩ
Current Analogue Measurement Range	<b>Input A &amp; D:</b> 0 mA to 20 mA
Voltage Analogue Measurement Range	<b>Input A &amp; D:</b> 0 V to 10 V
Analogue Resolution	1 %
Analogue Accuracy	±2 %
<b>Digital Inputs</b>	
Number	8
Type	Negative Switching Digital Input
Closed Voltage Threshold	Less than 2.1 V
Open Voltage Threshold	Greater than 6.6 V
<b>Emergency Stop Input</b>	
Number	1
Type	Positive Switching Digital Input
Closed Voltage Threshold	Greater than 5.0 V
Open Voltage Threshold	Less than 3.0 V
<b>Magnetic Pick-up Input</b>	
Voltage Input Range	0.5 V <sub>Peak</sub> to 70 V <sub>Peak</sub>
Frequency Input Range	5 Hz to 10 kHz
Resolution	6.25 RPM
Accuracy	±25 RPM
Flywheel Teeth	10 to 500

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Part Number: 6110-05 / 6120-05

Specifications	
<b>Digital Outputs</b>	
Number	8
Type	Positive Switching DC Output
Positive DC Output Rating	<b>Output A to B (Fuel and Start):</b> 10 A for 10 s, 5 A Continuous at Emergency Stop input supply voltage <b>Output C to H:</b> 2 A <sub>DC</sub> at module supply voltage
<b>Communications</b>	
USB B	1 Programming Port
DSENet®	1 Expansion Port
CAN	1 Port ECU - Engine ECU / ECM
<b>Temperature</b>	
Operating Temperature	-30 °C to +70 °C / -22 °F to +158 °F
Storage Temperature	-40 °C to +85 °C / -40 °F to +185 °F
<b>Dimensions</b>	
Overall (W x H x D)	221 mm x 163 mm x 42.5 mm / 8.70 " x 6.43 " x 1.67 "
<b>Mounting</b>	
Type	Panel Fascia Mounting
Panel Cut-Out (W x H)	184 mm x 137 mm / 7.24 " x 5.39 "
Maximum Panel Thickness	8 mm / 0.3"

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Related Products		
<b>DSENet®</b>		
<b>DSE2548</b>	DSENet® LED Output Expansion Module	2548-01
<b>DSE2157</b>	DSENet® Output Expansion Module	2157-01
<b>DSE2152</b>	DSENet® Analogue Output Expansion Module	2152-01
<b>DSE2133</b>	DSENet® RTD/Thermocouple Input Expansion Module	2133-01
<b>DSE2131</b>	DSENet® Ratiometric Input Expansion Module	2131-01
<b>DSE2130</b>	DSENet® Input Expansion Module	2130-00
<b>DSEWebNet®</b>		
<b>DSE890 MKII</b>	DSEWebNet® / IoT Gateway - 4G (GSM/Ethernet)	0890-04
<b>DSE891 MKII</b>	DSEWebNet® / IoT Gateway - Ethernet Only	0891-04
<b>Accessories</b>		
<b>Gasket</b>	DSE61XX MKIII Gasket	020-521

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Environmental Testing Standards	
<b>Electro-Magnetic Compatibility</b>	
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
<b>Electrical Safety</b>	
BS EN 61010	Safety of Information Technology Equipment, including Electrical Business Equipment
<b>Temperature</b>	
BS EN 60068-2-1	Ab/Ae Cold Test -30 °C
BS EN 60068-2-2	Bb/Be Dry Heat +70 °C
<b>Vibration</b>	
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
<b>Humidity</b>	
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
<b>Shock</b>	
BS EN 60068-2-27	Three shocks in each of three major axes 15 Gn in 11 ms
<b>Degrees of Protection Provided by Enclosures</b>	
BS EN 60529	IP65 - From the front of the module when installed into a control panel (with Optional Gasket)

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DSE6110 MKIII	
Pin	Description
1 to 2	DC Supply
3	Emergency Stop
4	Fuel
5	Crank
6	Charge Alternator
7 to 12	Digital Outputs
13 to 14	Not Applicable
15 to 19	Analogue Inputs
20 to 22	Magnetic Pick-Up
23 to 25	Engine ECU/ECM
26 to 28	DSENet®
29 to 32	Generator Voltage Sensing
33 to 36	Not Applicable
37 to 41	Generator Current Sensing
42 to 49	Digital Inputs
50 to 52	Not Applicable

DSE6120 MKIII	
Pin	Description
1 to 2	DC Supply
3	Emergency Stop
4	Fuel
5	Crank
6	Charge Alternator
7 to 12	Digital Outputs
13 to 14	Not Applicable
15 to 19	Analogue Inputs
20 to 22	Magnetic Pick-Up
23 to 25	Engine ECU/ECM
26 to 28	DSENet®
29 to 32	Generator Voltage Sensing
33 to 36	Mains (Utility) Voltage Sensing
37 to 41	Generator/Load Current Sensing
42 to 49	Digital Inputs
50 to 52	Not Applicable

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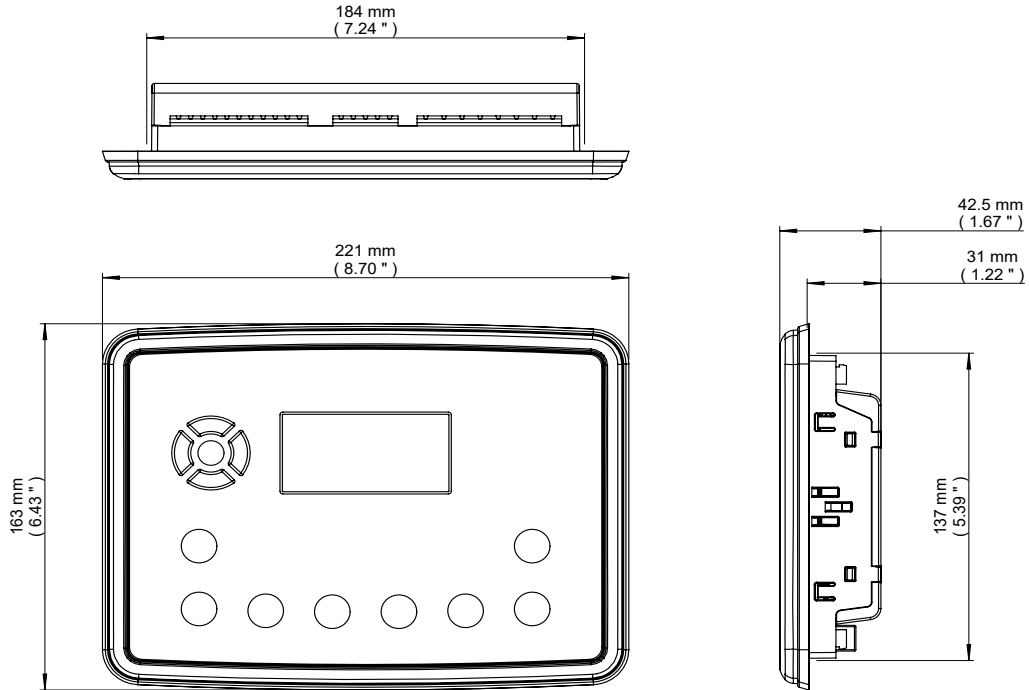
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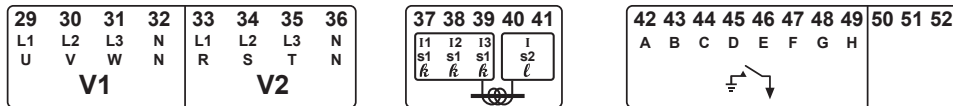
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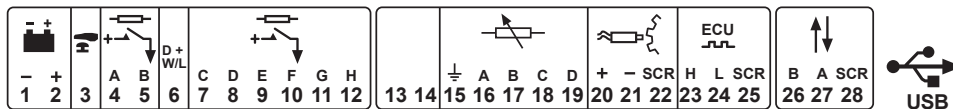
**Technical Drawing**



**Connection Label**



- DC Supply : 8 V to 35 V, 0.5 A max
- DC Outputs : 30 V, 5 A (T4 to T5); 2 A (T7 to T12)
- DC Inputs : 30 V max
- AC Voltage Inputs : 600 V AC, 50 Hz / 60 Hz, 1 ph to 3 ph
- AC Current Inputs : 5 A, 50 Hz / 60 Hz, 1 ph to 3 ph
- Charge Alternator : 30 VDC, 2.5 W max
- Magnetic Pickup : 70 V peak, 10 kHz max
- Analog Inputs : 10 V DC max
- Comms Port : 5 V DC max



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

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