

# DSECONTROL<sup>®</sup> MONITORING WITH INTELLIGENCE.



## DSE7110 & DSE7120

AUTO START & AUTO MAINS FAILURE CONTROL MODULES



The DSE7110 and DSE7120 are control modules for single gen-set applications. The modules incorporate a number of advanced features to meet the most demanding on-site applications.

The DSE7110 is an Automatic Start Control Module and the DSE7120 is an Auto Mains (Utility) Failure Control Module. The DSE7120 includes the additional capability of being able to monitor a mains (utility) supply. Both modules have been designed to start and stop diesel and gas generating sets that include electronic and non-electronic engines.

Both modules are simple to operate and feature a user friendly menu layout for improved clarity. Enhanced features include a real time clock for improved event monitoring and a 132 x 64 pixel LCD display.

### FEATURES

- Real time clock
- 132 x 64 pixel LCD display
- USB connectivity
- Five key menu navigation
- Configurable via PC software
- Front panel editor
- LED and LCD alarm indication
- Engine exercise mode
- Configurable start & fuel outputs
- Automatic load transfer
- Seven configurable inputs
- Eight configurable outputs
- Configurable timers and alarms
- Magnetic pick-up and CAN
- Improved programmable event log (5) showing date and time
- Alternative configuration
- Charge alternator fail warning and shutdown alarms with user programmable delay
- Sleep mode
- Easy access diagnostics page via PC, shows summary of output states
- Front panel editing of scheduler

### BENEFITS

- 132 x 64 pixel ratio makes information easy to read
- Real time clock provides accurate event logging
- PC software is license free
- Set maintenance periods can be configured to maintain optimum engine performance
- Advanced PCB layout ensures high module reliability

### SPECIFICATION

#### DC SUPPLY

**CONTINUOUS VOLTAGE RATING**  
8V to 35V Continuous

**CRANKING DIP PROTECTION**  
Able to survive 0V for 50ms, providing supply was at least 10V before dropout and supply recovers to 5V. This is achieved without the need for internal batteries

**CHARGE FAIL/ EXCITATION**  
0V to 35V fixed power source 2.5W

**MAXIMUM STANDBY CURRENT**  
80mA at 12V 40mA at 24V

**MAXIMUM OPERATING CURRENT**  
300mA at 12V 150mA at 24V

#### ALTERNATOR INPUT

**RANGE**  
15V - 333V (L-N) 50Hz - 60Hz  
(Minimum 15V AC Ph-N)

**ACCURACY**  
1% of full scale true RMS sensing

#### SUPPORTED TOPOLOGIES

3 phase 4 wire Delta  
3 phase 4 wire  
3 phase 3 wire  
Single phase 2 wire  
2 phase 3 wire L1 & L2  
2 phase 3 wire L1 & L3

#### MAINS/UTILITY INPUT (DSE7120 ONLY)

**RANGE**  
15V - 333V (L-N) 50Hz - 60Hz  
(Minimum 15V AC Ph-N)

**ACCURACY**  
1% of full scale true RMS sensing

#### SUPPORTED TOPOLOGIES

3 phase 4 wire Delta  
3 phase 4 wire  
3 phase 3 wire  
Single phase 2 wire  
2 phase 3 wire L1 & L2  
2 phase 3 wire L1 & L3

#### CT'S

**BURDEN**  
0.5VA

**PRIMARY RATING**  
1A - 8000A (user selectable)

**SECONDARY RATING**  
5A secondary

**ACCURACY OF MEASUREMENT**  
1% of full load rating

#### RECOMMENDATIONS

Class 1 required for instrumentation  
Protection class required if using for protection

## SPECIFICATION

### MAGNETIC PICKUP

#### VOLTAGE RANGE

+/- 0.5V minimum (during cranking) to 70V peak

#### FREQUENCY RANGE

1kHz - 10kHz

### OUTPUTS

#### OUTPUT A (FUEL)

15 Amp DC at supply voltage

#### OUTPUT B (START)

15 Amp DC at supply voltage

#### OUTPUTS C & D

8 Amp 250V (Volt free)

#### AUXILIARY OUTPUTS E,F,G,H

2 Amp DC at supply voltage

### DIMENSIONS

#### OVERALL

240mm x 181.1mm x 41.7mm  
9.4" x 7.1" x 1.6"

#### PANEL CUT-OUT

220mm x 160mm  
8.7" x 6.3"  
Max panel thickness 8mm ( 0.3")

## ENVIRONMENTAL TESTING STANDARDS

#### ELECTRICAL SAFETY

BS EN 60950  
Safety of Information Technology Equipment, including Electrical Business Equipment

#### 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

#### TEMPERATURE (OPERATING)

BS EN 60068  
Test Ab to +70°C 60068-2-2 Hot  
Test Ab to -30°C 60068-2-1 Cold

#### VIBRATION

BS EN 60068-2-6  
Ten sweeps in each of three major axes  
5Hz to 8Hz @ +/-7.5mm, 8Hz to 500Hz @ 2gn

#### HUMIDITY

BS 2011 part 2.1 60068-2-30  
Test Cb Ob Cyclic  
93% RH @ 40°C for 48 hours

#### SHOCK

BS EN 60068-2-27  
Three shocks in each of three major axes  
15gn in 11ms

#### DEGREES OF PROTECTION PROVIDED BY ENCLOSURES

BS EN 60529  
IP65 - Front of module when installed into the control panel with the supplied sealing gasket.

## OPERATION

The modules are operated via the START, STOP, AUTO and MANUAL soft touch membrane buttons on the front panel. The DSE7120 also has a TEST button. Both modules include load switch buttons. The main menu system is accessed using the five navigation buttons to the left of the LCD display.

## CONFIGURATION

The modules can be configured using the front panel buttons and by using the DSE Configuration Suite PC software and a USB lead.

## INPUTS & OUTPUTS

Analogue inputs are provided for oil pressure, coolant temperature and a further flexible input. These connect to conventional engine mounted resistive sensor units to provide accurate monitoring and protection facilities. They can also be configured to interface with digital switch type inputs for low oil pressure and high coolant temperature shutdowns. Six user configurable digital inputs are also included.

Outputs are provided for fuel solenoid, start solenoid and six additional configurable outputs. On these configurable outputs a range of different functions, conditions or alarms can be selected.

## INSTRUMENTATION

The modules provide advanced metering facilities, displaying the information on the LCD display. The information can be accessed using five menu navigation buttons to the left of the display.

DSE7110	DSE7120
<b>Generator Volts</b> L1-N, L2-N, L3-N <b>Generator Volts</b> L1-L2, L2-L3, L3-L1 <b>Generator Amps</b> L1,L2,L3 <b>Generator Frequency Hz</b> <b>Engine Speed RPM</b> <b>Engine Oil Pressure</b> <b>Fuel Level % (optional)</b> <b>Engine Temperature</b> <b>Plant Battery Volts</b> <b>Engine Hours Run</b> <b>Charge Alternator Voltage</b> <b>Number of engine starts</b>	<b>Generator Volts</b> L1-N, L2-N, L3-N <b>Generator Volts</b> L1-L2, L2-L3, L3-L1 <b>Generator Amps</b> L1,L2,L3 <b>Generator Frequency Hz</b> <b>Engine Speed RPM</b> <b>Engine Oil Pressure</b> <b>Fuel Level % (optional)</b> <b>Engine Temperature</b> <b>Plant Battery Volts</b> <b>Engine Hours Run</b> <b>Mains Volts</b> L1-N, L2-N, L3-N <b>Mains Volts</b> L1-L2, L2-L3, L3-L1 <b>Mains Frequency Hz</b> <b>Charge Alternator Voltage</b> <b>Number of engine starts</b>
EXTENDED INSTRUMENTATION FROM ELECTRONIC ENGINES (WHERE AVAILABLE)	
<b>Oil temperature</b> <b>Coolant pressure</b> <b>Turbo pressure</b> <b>Inlet manifold temperature</b> <b>Exhaust temperature</b> <b>Fuel Consumption</b> <b>Atmospheric pressure</b> <b>Fuel temperature</b> <b>Fuel used</b>	<b>Oil temperature</b> <b>Coolant pressure</b> <b>Turbo pressure</b> <b>Inlet manifold temperature</b> <b>Exhaust temperature</b> <b>Fuel Consumption</b> <b>Atmospheric pressure</b> <b>Fuel temperature</b> <b>Fuel used</b>

## EVENT LOG

The modules include a comprehensive event log that shows the most recent 5 alarm conditions. This feature is enhanced by the real time clock, as it allows each alarm condition to be stamped with the date and time. The event log displays the fault condition, time and date all on one page.

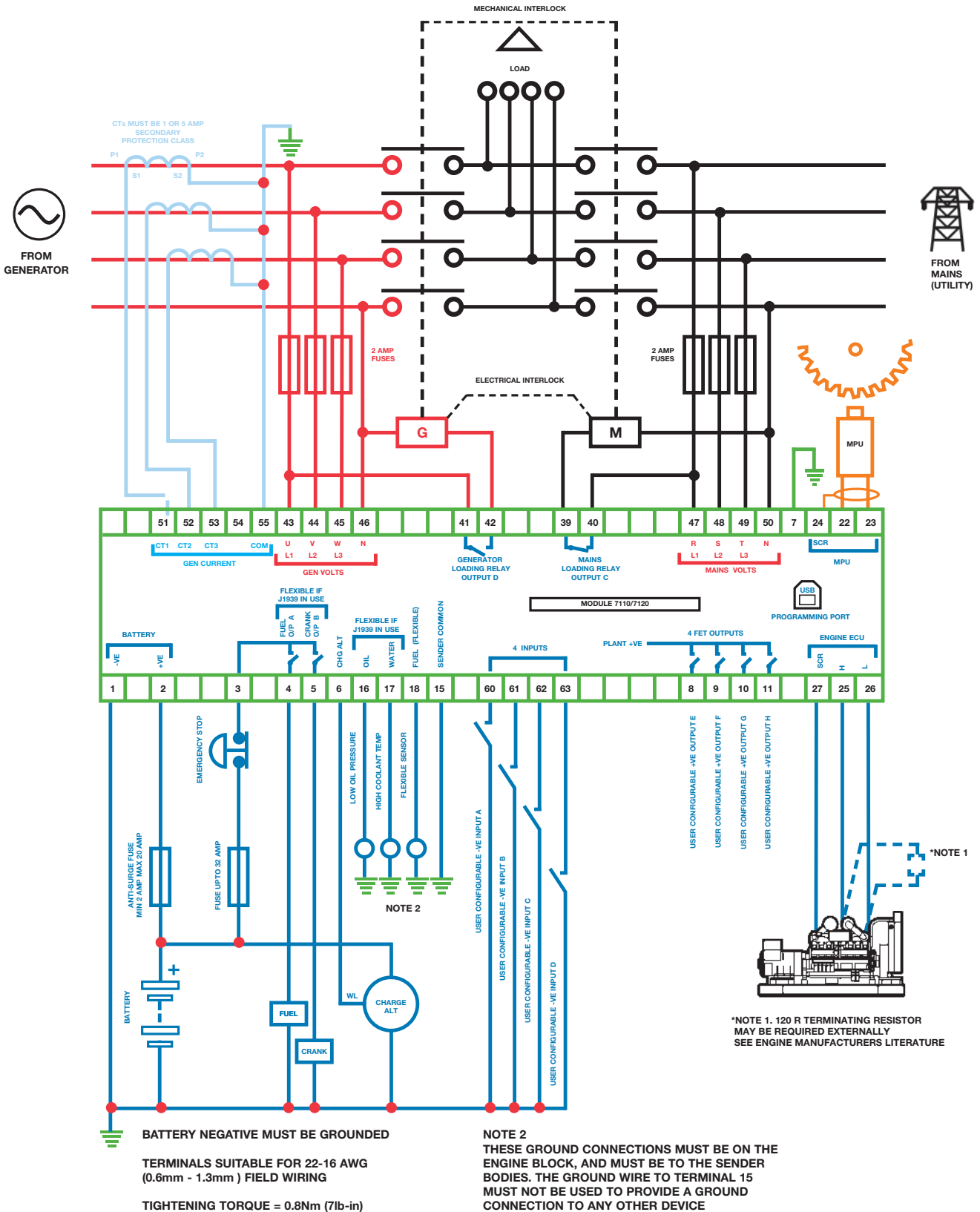
## RELATED MATERIALS

TITLE	PART NO'S
7110 Installation Instructions	053-080
7120 Installation Instructions	053-081
7110 / 7120 Operator Manual	057-113
PC Configuration Suite Manual	057-117

## ELECTRONIC ENGINE COMPATABILITY

- CAT
- Cummins
- Deutz
- John Deere
- MTU
- Perkins
- Scania
- Volvo
- IVECO
- Generic
- Plus additional manufacturers

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