

# DSE4510/20 MKII

## AUTO START AND AUTO MAINS FAILURE CONTROL MODULES

### (ALTERNATOR FREQUENCY & CAN SPEED SENSING)

**DSE4510 MKII**

**DSE4520 MKII**

**KEY FEATURES**

- Auto Start and AMF mode in one module (DSE4520 MKII only)
- J1939-75 support and CAN alarm ignore function
- Alternator frequency & CAN speed sensing in one variant
- Largest back-lit icon display in its class (configurable as text display)
- Heated display option
- Real time clock provides accurate event logging
- Fully configurable via the fascia or PC using USB communication
- Extremely efficient power save mode
- 3 phase generator sensing
- 3 phase mains (utility) sensing (DSE4520 MKII only)
- Compatible with 600 V ph to ph nominal systems
- Generator/load power monitoring (kW, kV A, kV Ar, pf)
- Accumulated power monitoring (kW h, kVA h, kVAR h)
- Generator overload protection (kW)
- Generator/load current monitoring and protection
- Fuel and start outputs (configurable when using CAN)
- 4 configurable DC outputs
- 5 V output
- Configurable fuel & crank outputs
- 3 configurable analogue/digital inputs

- 4 configurable digital inputs
- Configurable staged loading outputs
- 3 engine maintenance alarms
- Engine speed protection
- Engine hours counter
- Engine pre-heat
- Engine run-time scheduler
- Engine idle control for starting & stopping
- Tier 4 engine instrumentation screens
- Battery voltage monitoring
- Start on low battery voltage
- Configurable remote start input
- 1 alternative configuration
- Comprehensive warning, electrical trip or shutdown protection upon fault condition
- LCD alarm indication
- Coolant temperature pre-alarm
- Event log (50)
- Fuel solenoid pulling circuit
- On-screen line diagram on/off functionality
- Configurable CAN instrumentation (10)
- Water in fuel digital input
- Tank bund alarm digital input
- Generator at rest output
- ECU periodic wake-up for information retrieval
- Back-light power-save mode
- Adjustable delay crank timer
- Pre/post heat functionality

- Overload protection
- Mains/generator A/C system selection
- Output timer for external audible alarm
- Accommodates a wide range of senders and temperatures

**KEY BENEFITS**

- Ultimate size to feature ratio
- Automatically transfers between mains (utility) and generator (DSE4520 MKII only)
- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored simultaneously which are clearly displayed on the largest back-lit icon display in its class
- The module can be configured to suit a wide range of applications
- Uses DSE Configuration Suite PC Software for simplified configuration
- Compatible with a wide range of CAN engines including Tier 4
- Licence-free PC software
- IP65 rating (with optional gasket) offers increased resistance to water ingress

**SPECIFICATIONS**
**DC SUPPLY**
**CONTINUOUS VOLTAGE RATING**  
 8 V to 35 V 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. LEDs and backlight will not be maintained during cranking.

**MAXIMUM OPERATING CURRENT**

85 mA at 12 V, 96 mA at 24 V

**MAXIMUM STANDBY CURRENT**

51 mA at 12 V, 47 mA at 24 V

**MAXIMUM SLEEP CURRENT**

35 mA at 12 V, 32 mA at 24 V

**MAXIMUM DEEP SLEEP CURRENT**

&lt;10 uA at 12 V, &lt;10 uA at 24 V

**MAINS (UTILITY) DSE4520 MKII ONLY**  
**VOLTAGE RANGE**

 15 V to 415 V AC (Ph to N)  
 26 V to 719 V AC (Ph to Ph)

**FREQUENCY RANGE**

3.5 Hz to 75 Hz

**OUTPUTS**
**OUTPUT A (FUEL)**

10 A short term, 5 A continuous, at supply voltage

**OUTPUT B (START)**

10 A short term, 5 A continuous, at supply voltage

**AUXILIARY OUTPUTS C, D, E & F**

2 A DC at supply voltage

**GENERATOR**
**VOLTAGE RANGE**

 15 V to 415 V AC (Ph to N)  
 26 V to 719 V AC (Ph to Ph)

**FREQUENCY RANGE**

3.5 Hz to 75 Hz

**DIMENSIONS**
**OVERALL**

 140 mm x 113 mm x 43 mm  
 5.5" x 4.4" x 1.7"

**PANEL CUT-OUT**

 118 mm x 92 mm  
 4.6" x 3.6"

**MAXIMUM PANEL THICKNESS**

 8 mm  
 0.3"

**STORAGE TEMPERATURE RANGE**

 -40 °C to +85 °C  
 -40 °F to +185 °F

**OPERATING TEMPERATURE RANGE**

 -30 °C to +70 °C  
 -22 °F to +158 °F

 -40 °C to +70 °C (for heated display variant)  
 -40 °F to +158 °F (for heated display variant)

**OPTIONAL PARTS**

PART	PART NUMBER
IP65 Gasket	020-282

**RELATED MATERIALS**
**TITLE**

 DSE4510/20 MKII Installation Instructions  
 DSE4510/20 MKII Operator Manual  
 DSE4510/20 MKII Configuration Suite PC Manual

**PART NO.**

 053-190  
 057-260  
 057-258

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# DSE4510/20 MKII

## AUTO START AND AUTO MAINS FAILURE CONTROL MODULES

### (ALTERNATOR FREQUENCY & CAN SPEED SENSING)

The DSE4510 MKII Auto Start Control Module and the DSE4520 MKII Auto Mains (Utility) Failure Control Module are suitable for a wide variety of single gen-set applications.

Whilst maintaining functions included within higher end controllers, such as generator or load power monitoring, the DSE45xx MKII range of especially compact controllers provide the user with the ultimate size to feature ratio.

Monitoring engine speed, oil pressure, coolant temperature, frequency, voltage, current, power and fuel level, the modules will give comprehensive engine and alternator protection. This will be indicated on the largest back-lit LCD icon display in its class via an array of warning, electrical trip and shutdown alarms.

Electronic J1939 (CAN) and non-electronic (alternator frequency sensing) engine support for diesel, gas and petrol engines all in one variant. With a number of flexible inputs, outputs and protections, the module can be easily adapted to suit a wide range of applications.

Through USB Communication both modules can be easily configured using the DSE Configuration Suite PC Software or can be fully configured through the module's front panel editor.

All DSE products are supported by the DSE global technical support team which gives our customers and end users access to 24 hour system help and advice.

#### \*AVAILABLE VARIANTS

4510-05	Auto Start with real time clock
4510-06	Auto Start with real time clock & heated display
4520-05	Auto Mains Failure with real time clock
4520-06	Auto Mains Failure with real time clock & heated display
4520-05	Auto Mains Failure with real time clock
4520-07	Auto Mains Failure with real time clock

#### 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 °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% RH 48 Hours  
BS EN 60068-2-78  
Cab Damp Heat Static 40 °C at 93% RH 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 - Front of module when installed into the control panel with the optional sealing gasket.

## COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF GEN-SET APPLICATIONS

