

# DSE4520 MKII

## AUTO MAINS FAILURE CONTROL MODULE



### KEY FEATURES

- Load unbalanced alarm
- Configurable for use as an auto start and AMF control module
- J1939-75 support and CAN alarm ignore function
- Alternator frequency & CAN speed sensing in one variant
- Largest back-lit icon display in its class
- 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
- 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
- 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
- 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

### KEY BENEFITS

- Automatically transfers between mains (utility) and generator
- 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 large back-lit icon display.
- 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

<10 uA at 12 V, <10 uA at 24 V

#### MAINS (UTILITY)

**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

### 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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# DSE4520 MKII

## AUTO MAINS FAILURE CONTROL MODULE

The DSE4520 MKII Auto Mains (Utility) Failure Control Module is suitable for a wide variety of single gen-set applications.

Whilst maintaining functions included within higher end controllers, such as generator and load power monitoring, the DSE4520 MKII provides the user with an outstanding 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.

The module provides 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 the module 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 our dedicated technical support team, which gives customers and end users access to 24 hour help and advice.

### \*AVAILABLE VARIANTS

4520-05 Auto Mains Failure (Rtc)

### 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

