The DSE4510 Auto Start Control Module and the DSE4520 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 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.

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.

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

### USB PORT
- CONFIGURABLE
- INPUTS
- DC OUTPUT
  - (2 for DSE4510)
- ANALOGUE SENDER
- DC POWER SUPPLY

### DSE4510/20
- MAINS (UTILITY) SENSING (DSE4520)
- DC OUTPUT
  - 4520 1 OF 4
- GENERATOR / LOAD CURRENT
- DC OUTPUT
  - 4510 1 OF 2
  - 4520 1 OF 4
- GENERATOR SENSING
- CHARGE ALTERNATOR
- FUEL AND START OUTPUTS (Flexible with CAN)
- ELECTRONIC ENGINE CAN

### AVAILABLE VARIANTS
- 4510-03: Auto start with real time clock
- 4510-04: Auto start with real time clock & heated display
- 4520-03: Auto Mains Failure with real time clock
- 4520-04: Auto Mains Failure with real time clock & heated display

**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 g

- **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 g 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.
DSE4510/20
AUTO START AND AUTO MAINS FAILURE CONTROL MODULES
(ALTERNATOR FREQUENCY & CAN SPEED SENSING)

FEATURES

- Ultimate size to feature ratio
- Automatically transfers between mains (utility) and generator (DSE4520 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
- Licence-free PC software
- IP65 rating (with optional gasket) offers increased resistance to water ingress

KEY BENEFITS

- 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 (DSE4520 only)
- Compatible with 600 V ph to ph nominal systems
- Generator/load power monitoring (kW, kVA, kVAR, pf)
- Accumulated power monitoring (kWh, kVAh, kVARh)
- Generator overload protection (kW)
- Generator/load current monitoring and protection
- Fuel and start outputs (configurable when using CAN)
- 4 configurable DC outputs (2 for DSE4510)
- 3 configurable analogue/digital inputs
- 4 configurable digital inputs
- Configurable staged loading
- Engine hours counter
- Engine pre-heat
- Engine run-time scheduler
- Engine idle control for starting & stopping
- 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)

RELATED MATERIALS

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<tr>
<th>TITLE</th>
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<tr>
<td>DSE4510/20 Installation Instructions</td>
<td>053-157</td>
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<td>DSE4510/20 Operator Manual</td>
<td>057-171</td>
</tr>
<tr>
<td>DSE4510/20 Configuration Suite PC Manual</td>
<td>057-172</td>
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SPECIFICATION

- 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) DSE4520 ONLY
  - VOLTAGE RANGE
    - 15 V to 415 V AC (Ph to N)
    - 10 A short term, 5 A continuous, 4.6" x 3.6" OPENING
  - 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
  - 2 A DC at supply voltage

- AUXILIARY OUTPUTS E & F DSE4520
  - 2 A DC at supply voltage

- GENERATOR
  - VOLTAGE RANGE
    - 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
    - 0.3" OVERALL
  - PANEL CUT-OUT
    - 118 mm x 90 mm
    - 4.6" x 3.6"
  - MAXIMUM PANEL THICKNESS
    - 8 mm

- STORtAGE TEMPERATURE RANGE
  - -40 °C to +85 °C
  - -40 °F to +185 °F

- OPERATING TEMPERATURE RANGE
  - -40 °C to +70 °C
  - -40 °F to +158 °F

OPTIONAL PARTS

<table>
<thead>
<tr>
<th>PART NUMBER</th>
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<tbody>
<tr>
<td>020-282</td>
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