

# DSE4510/20

## AUTO START AND AUTO MAINS FAILURE CONTROL MODULES

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.

Electronic J1939 (CAN) and non-electronic (alternator 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

4510-03	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 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

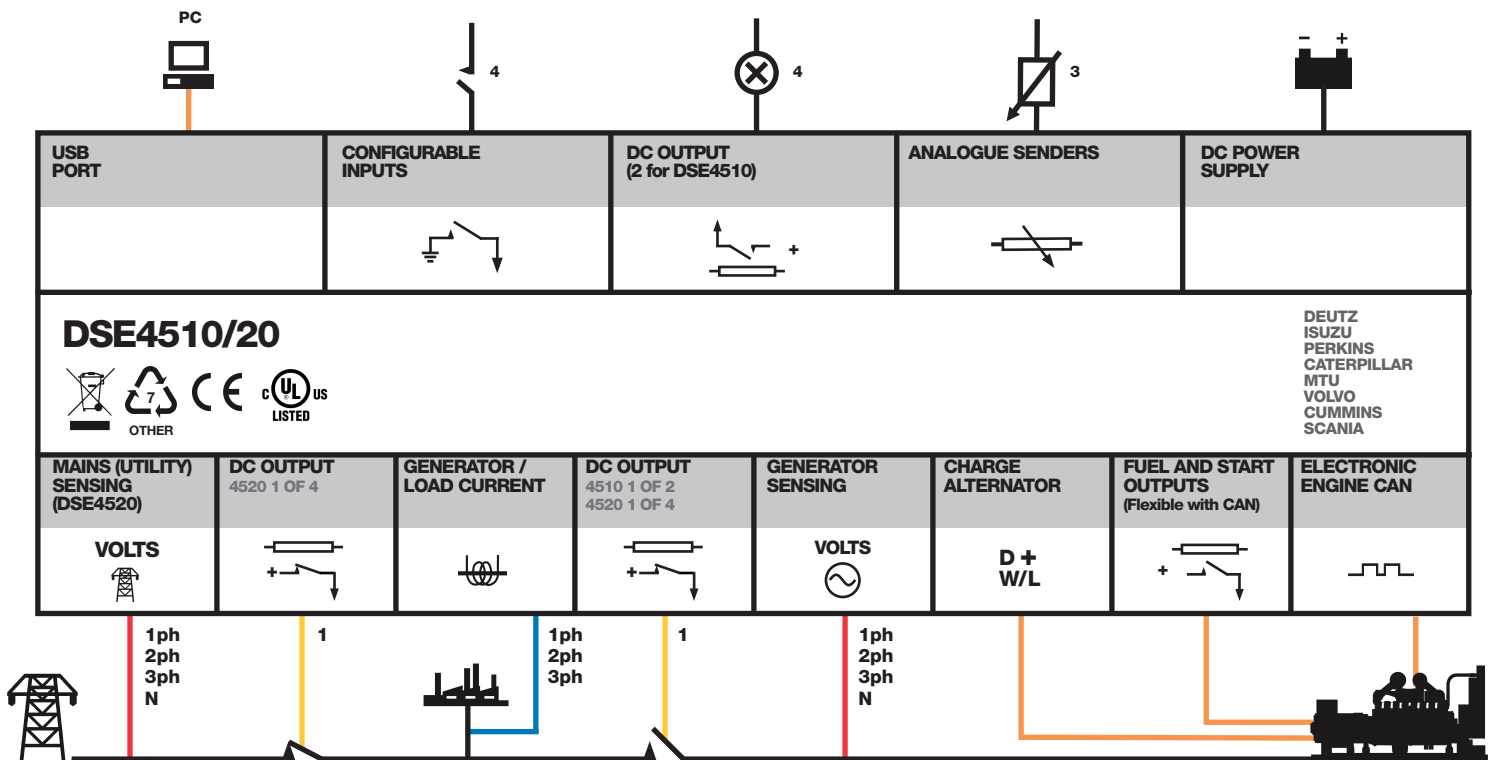
#### SHOCK

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



# DSE4510/20

## AUTO START AND AUTO MAINS FAILURE CONTROL MODULES

### FEATURES



DSE4520

DSE4510



### KEY BENEFITS

- 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
- The module can be configured to suit a wide range of applications
- Compatible with a wide range of CAN engines, including tier 4 engine support
- Licence-free PC software
- IP65 rating (with optional gasket) offers increased resistance to water ingress

### KEY FEATURES

- 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 - 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 (2 for DSE4510)
- 3 configurable analogue/digital inputs
- 4 configurable digital inputs
- Configurable staged loading outputs
- CAN and alternator speed sensing in one variant
- 3 engine maintenance alarms
- Engine speed protection
- 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

#### TITLE

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

#### PART NO'S

053-157  
057-171  
057-172

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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)  
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

2 A DC at supply voltage

##### AUXILIARY OUTPUTS E & F DSE4520

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

##### OPERATING TEMPERATURE RANGE

-30°C to +70°C  
-40°C to +70°C (for heated display variant)

### OPTIONAL PARTS

PART	PART NUMBER
IP65 Gasket	020-282