

# DSE7450

## DC GENERATOR CONTROLLER

The DSE 7450 is a control module designed to control DC generators in supplying both a load and/or the charging of batteries.

Specific attention has been given to ensure this module has the necessary features to be configured for many different and challenging applications. Owing to the large number of monitoring points and the built in programmable logic controller, a wide number of operating modes can be realised. This provides the user with the ultimate flexibility in the engine control of the generator to ensure battery life optimisation, reduce engine maintenance/ replacement and fuel usage.

Application specific needs can also be achieved by combining the standard and embedded safety features for generator control and the configurable discrete I/O.

The DSE7450 will announce warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs, remote PC, audible alarm and via SMS text alerts. Parameters can be adjusted using the LCD and tactile rubber silicon 5 key menu navigation. PIN code protection ensures that only authorised persons can access these features.

The module includes USB, RS232, RS485 & Ethernet ports as well as dedicated terminals for system expansion.

The DSE7450 module is compatible with both electronic (CAN) and non-electronic engines and offers a comprehensive number of flexible inputs, outputs and extensive engine protections. This means the system can be easily adapted to meet the most demanding industry requirements. The modules can be easily configured using the DSE Configuration Suite Software via an A to B USB cable.

This data sheet refers to V2+ controllers. For V1 controllers please refer to the Operator Manual.

### 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

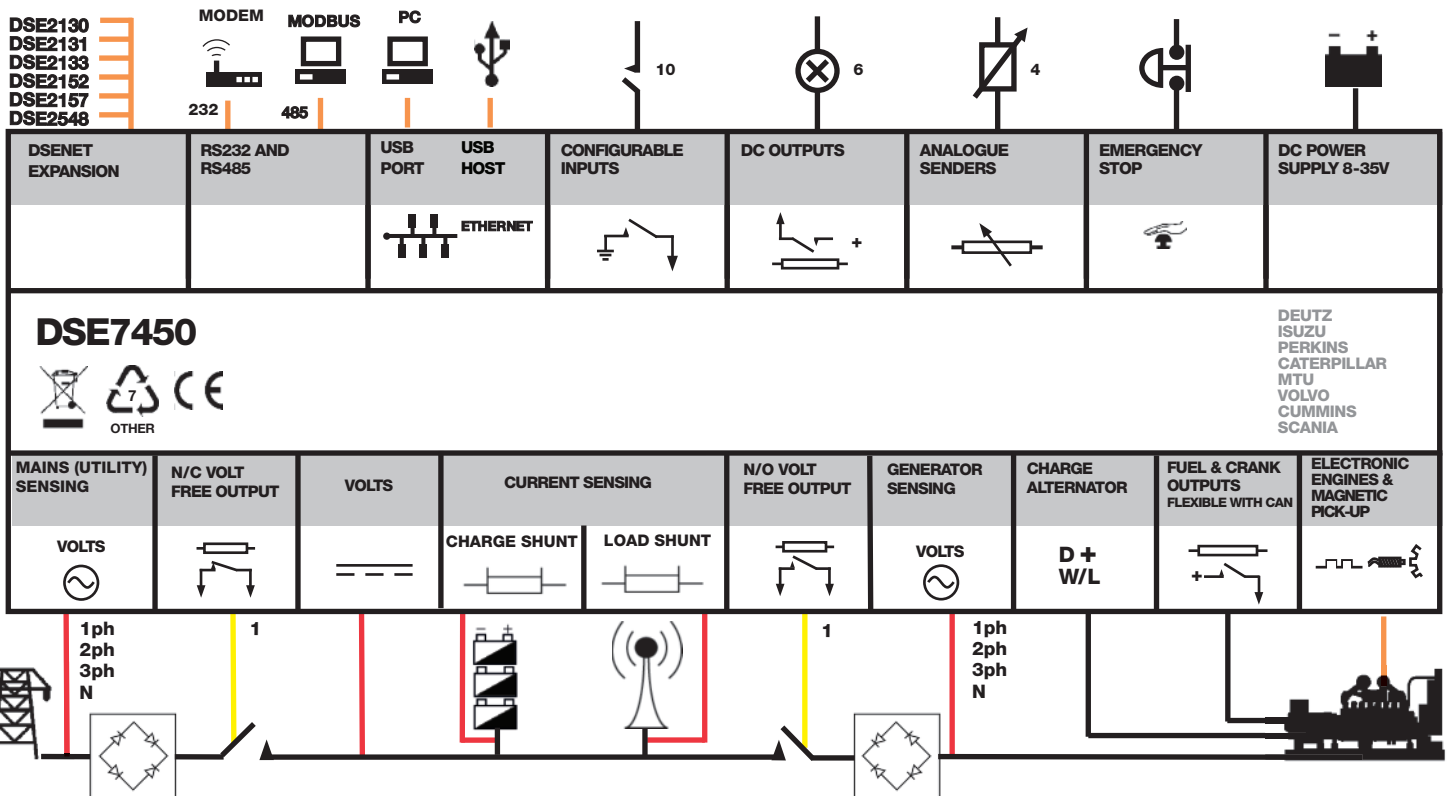
#### SHOCK

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 supplied sealing gasket.

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



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### KEY FEATURES

- Configurable inputs (10)
- Configurable outputs (8)
- Configurable maintenance alarms (3)
- Configurable battery maintenance alarms (3)
- Configurable alarms and timers
- Automatic or Manual start with configurable start and stop timers
- 2 DC shunt inputs (Configurable 0-250mV and 0-5000 A)
- AC & DC voltage measurement
- Mains (utility) failure detection
- Dedicated load test button
- kW overload alarms
- Comprehensive electrical protection
- USB, RS232, RS485, Ethernet and Modbus RTU/TCP communication
- PLC functionality using program editor within PC configuration suite
- Multi event exercise timer
- Back-lit LCD 4-line text display with multiple languages possible
- Audible alarm
- Fixed and user defined LED indicators
- Real time clock and event log (250 events).
- Fault condition notification to designated PC
- Engine Protection
- Five key menu navigation for LCD display (PIN protected)
- Engine speed detection via CAN, magnetic pick-up or alternator sensing
- Fuel usage monitor and low level alarms
- Charge alternator failure alarm
- Manual fuel pump control
- 'Protections disabled' function
- Manual/Automatic load transfer
- Fully configurable & remote SCADA monitoring via DSE Configuration Suite PC Software
- Start & stop capability & advanced SMS messaging (additional modem required)
- Additional display screens to help with modem diagnostics
- DSENet® expansion
- Battery & Load monitoring
- DC alarms for overcurrent & short circuit
- Battery temperature monitor
- Battery charge remaining display
- Battery depth of discharge display
- AVR bias control

### KEY BENEFITS

- Programmable characteristics to influence charging operation and extend battery life
- Optimise generator running time to reduce fuel usage, reduce maintenance and extend engine and battery lifetime
- Automatic start/stop according to configured settings and battery condition.
- Engine start/stop can be adjusted to maintain desired battery charge level
- DSENet® connection for system expansion modules
- Ability to implement application specific logic and customise operation.
- Allows measurement of Battery current, Load current and Total current.

This data sheet refers to V2+ controllers. For V1 controllers please refer to the Operator Manual.

### RELATED MATERIALS

TITLE
DSE7450 Installation Instructions
DSE7450 Operator Manual
DSE7450 PC Configuration Suite Manual

### PART NO'S

053-143
057-170
057-169

### 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

#### MAXIMUM OPERATING CURRENT

260 mA at 12 V, 130 mA at 24 V

#### MAXIMUM STANDBY CURRENT

120 mA at 12 V, 65 mA at 24 V

#### CHARGE FAIL/EXCITATION RANGE

0 V to 35 V

#### OUTPUTS

##### OUTPUT A (FUEL)

15 A DC at supply voltage

##### OUTPUT B (START)

15 A DC at supply voltage

##### OUTPUTS C & D

8 A AC at 250 V AC (Volt free)

##### AUXILIARY OUTPUTS E,F,G,H,I & J

2 A DC at supply voltage

#### GENERATOR

##### VOLTAGE RANGE

15 V to 150 V AC (L-N)

##### FREQUENCY RANGE

3.5 Hz to 75 Hz

##### MAINS (UTILITY)

##### VOLTAGE RANGE

15 V to 333 V AC (L-N)

##### FREQUENCY RANGE

3.5 Hz to 75 Hz

##### MAGNETIC PICK UP

##### VOLTAGE RANGE

+/- 0.5 V to 70 V

##### FREQUENCY RANGE

10,000 Hz (max)

##### BUILT-IN AVR BIAS

##### MINIMUM LOAD IMPEDANCE

1000 Ω

Fully isolated

##### BIAS VOLTAGE

0 V to 10 V DC

Fully isolated

#### DIMENSIONS

##### OVERALL

240 mm x 172 mm x 57 mm

9.4" x 6.8" x 2.2"

##### PANEL CUTOUT

220 mm x 160 mm

8.7" x 6.3"

##### MAXIMUM PANEL THICKNESS

8 mm

0.3"

##### OPERATING TEMPERATURE RANGE

-30 °C to +70 °C

##### STORAGE TEMPERATURE RANGE

-40 °C to +85 °C

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