



DEEP SEA ELECTRONICS

509

AUTO MAINS  
FAILURE

Issue 3  
VH 05/02/03

## DESCRIPTION

The configurable **Automatic Mains Failure Model 509** allows many of the industry's demanding specifications to be achieved. Variations of the unit offer additional functions such as the RS232 interface for remote monitoring by a volt free relay module, annunciator or building management system.

The 509 is used to start a generator on a mains (utility) failure, and transfer the load when the engine's operating criteria has been met. On restoration of the mains (utility) supply, the engine is returned to standby mode.

Operation of the module is via a four position rotary switch (key-switch option available) mounted on the front panel with STOP, AUTO, MANUAL (Off-load run) and TEST (on-load run) positions.

Once activated, the 509 module carries out all the start and stop procedures of the engine, indicating operational status and fault conditions, and automatically shutting down the engine, giving true first up fault condition of the engine failure. The information is displayed on an illuminated Liquid Crystal Display on the front panel.

Text and selective operational sequences can be altered using the **801 Calibration Unit**. Adjustable parameters are displayed on the screen when the **CONFIGURATION** mode is activated.

Access to the critical operational sequences and timers, for use by restricted personnel, are barred by a security code.

**Relay outputs** are provided for Fuel Solenoid Output, Start Output, Alarm Output and one configurable output. The configurable relay is usually configured as pre-heat, however this function can be changed to activate on a range of 6 different functions, conditions or alarms. The relays supply positive plant supply out.

**Configurable inputs** are available for Low Oil Pressure or High Engine Temperature, allowing the module to function with N/O or N/C switches. Three fully configurable auxiliary inputs are provided to give protection expansion. These can be selected to be indication, warning or shutdown inputs either immediate or held off during start up. Alternatively they may be configured to provide additional control features to the module.

The 500 series modules have been designed for front panel mounting. The module is fitted into the panel cut-out with the fixing clips removed. These are then fitted from the rear. Connection is via locking plug and socket connectors.

## FEATURES

- Under/over speed shutdown
- Under/over frequency shutdown
- Low oil pressure shutdown
- Adjustable crank cycle/attempts
- External remote start input
- Magnetic pick-up or alternator speed monitoring
- 3 digital inputs – fully user configurable
- Configurable relay output
- LCD back-lighting for low light-level operation



## SPECIFICATION

### DC Supply:

8 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 5V. *This is achieved without the need for internal batteries.*

### Mains Input Range:

100 - 300 V ac RMS

### Mains Trip Range:

75 - 275 V ac RMS

### Alternator Input Range:

15 - 300 V ac RMS

### Alternator Input Frequency:

50 - 60 Hz at rated engine speed.

### Magnetic Input Range:

0.5 V to +/- 70 V (Clamped by transient suppressors)

### Magnetic Pickup Input

**Frequency:** 2300Hz to 6000 Hz at rated engine speed.

### Start/Fuel Relay Output:

16 Amp DC at supply voltage.

### Auxiliary/Alarm Relay Outputs:

6 Amp DC at supply voltage.

### Contacting Relay Outputs:

8 Amp RMS AC at Mains voltage.

### Dimensions:

144mm x 72mm x 141mm

5.7" x 2.8" x 5.5"

(Excluding Key-switch)

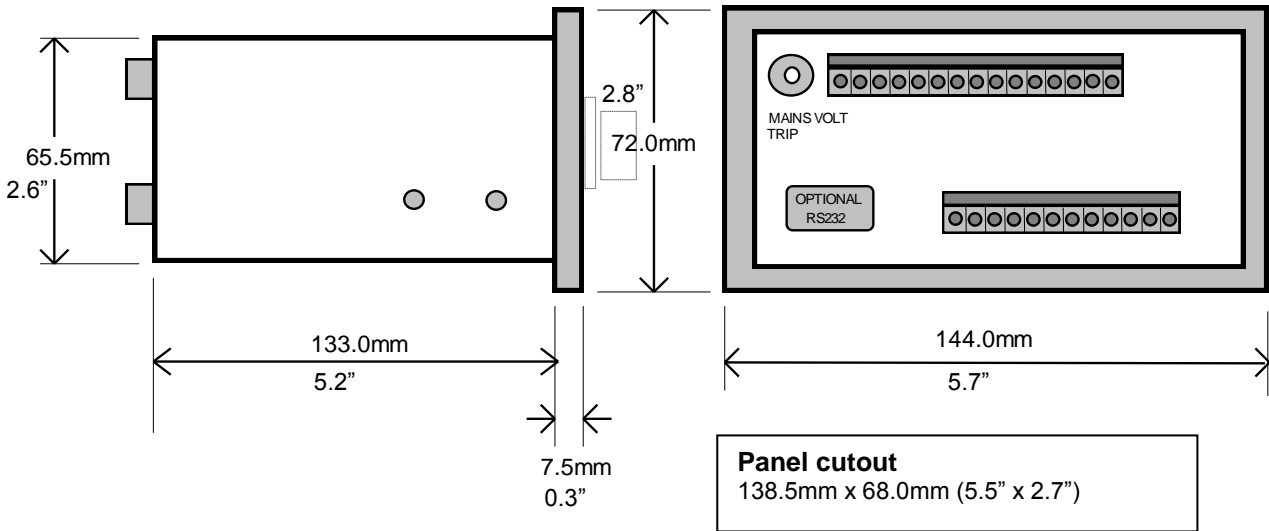
### Charge Fail / Excitation Range:

0 V to 35 V

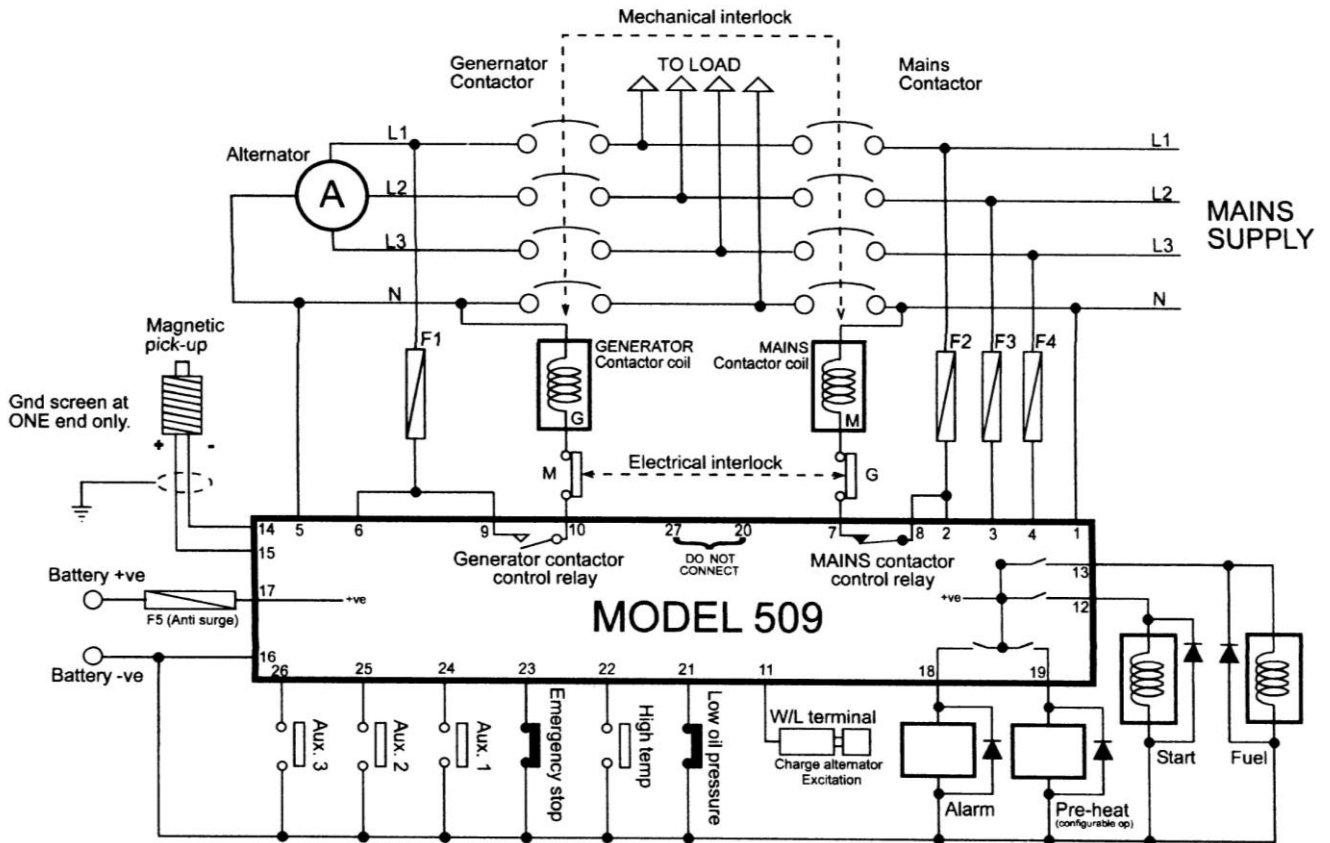
### Operating Temperature Range:

-10° to +60°C

## CASE DIMENSIONS



## TYPICAL CONNECTIONS



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