



DEEP SEA ELECTRONICS PLC

## DESCRIPTION

The Model **541 Protection Expansion/Annunciator** is designed to be used as either a protection expansion module, an annunciator, or a combination of both. The inputs are fully configurable by the user to suit the application. The module features a number of facilities enabling it to be used as a stand alone module or part of a complex control system. It is particularly suited to providing input expansion to the DSE 500 series control modules.

The **Safety On timer** can be selected to be either internal from the Fuel On input being active, or externally fed from another device such as the 520 Automatic Start module.

An **Alarm Reset input** is provided to enable the alarms to be cleared. This can be configured to be fed from either plant negative or plant positive DC. This gives maximum flexibility to the module, and allows for interfacing with an output relay on a 520 to enable the 520 module control switch to be the master alarm clear control.

The module also features **plant DC supply monitoring** alarms and can provide indication of a high or low supply voltage. This feature can be disabled if not required.

Alterations to the system are made by using a PC and the 808 interface. This also provides the operator with **real time diagnostic facilities** to monitor the operation of the system.

**Relay outputs** are provided for by way of six configurable outputs. Normally, four relays are configured as Warning, Shutdown, Electrical Trip and Common Alarm outputs. The remaining two relays are configured to signal starting and delayed alarms active. However the relay functions are configurable to activate on a range of functions, conditions or alarms. Outputs of relays 1&2 are at negative plant supply to give compatibility with the inputs to other 500 series modules. Relays 3 to 6 are volt free.

The module can be fitted to the 157 relay expansion module to provide a further eight fully configurable volt free relay outputs.

**Configurable inputs** are available for Fuel, Safety on, Reset and Lamp test. This allows the module to function with normally open or normally closed switches. Additionally ten fully configurable auxiliary inputs are provided to give protection expansion or annunciation. These can be selected to be indication, warning, shutdown or electrical trip inputs either immediate, on start-up or held off during safety on delay.

**Uncommitted LED's** allow annunciation with configurable colour selection – each LED provides choice of Red, Green or Amber. Standard indication or warnings are displayed as 'steady' illuminations, and Shutdowns or Electrical Trips are displayed as 'flashing'.

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



### NOTE

For applications requiring more than 10 input channels it is possible to use multiple modules to achieve the number of input channels needed. Alternatively if a lesser number of channels are required the DSE model 540 provides 5 input channels as standard.

# 541

## Protection Expansion/Annunciator

Issue 3  
VH 13/11/01



## 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.*

**Max. Operating Current:**  
340 mA at 12 V. 240 mA at 24 V.

**Max. Standby Current:**  
15 mA at 12 V. 15 mA at 24 V.

**DC Alarm Voltage Range:**  
Minimum Low Volts trip 0V  
Maximum High Volts trip 40V  
Time delay 0sec – 60minutes

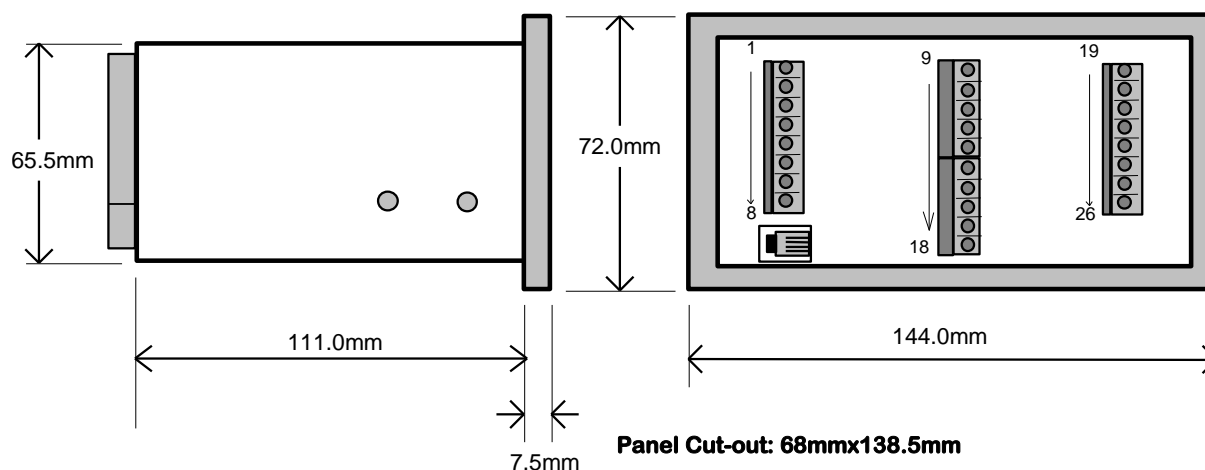
**Auxiliary Relay Outputs:**  
5 Amp DC at supply voltage.

**Dimensions:**  
72 x 144 x 118.5mm

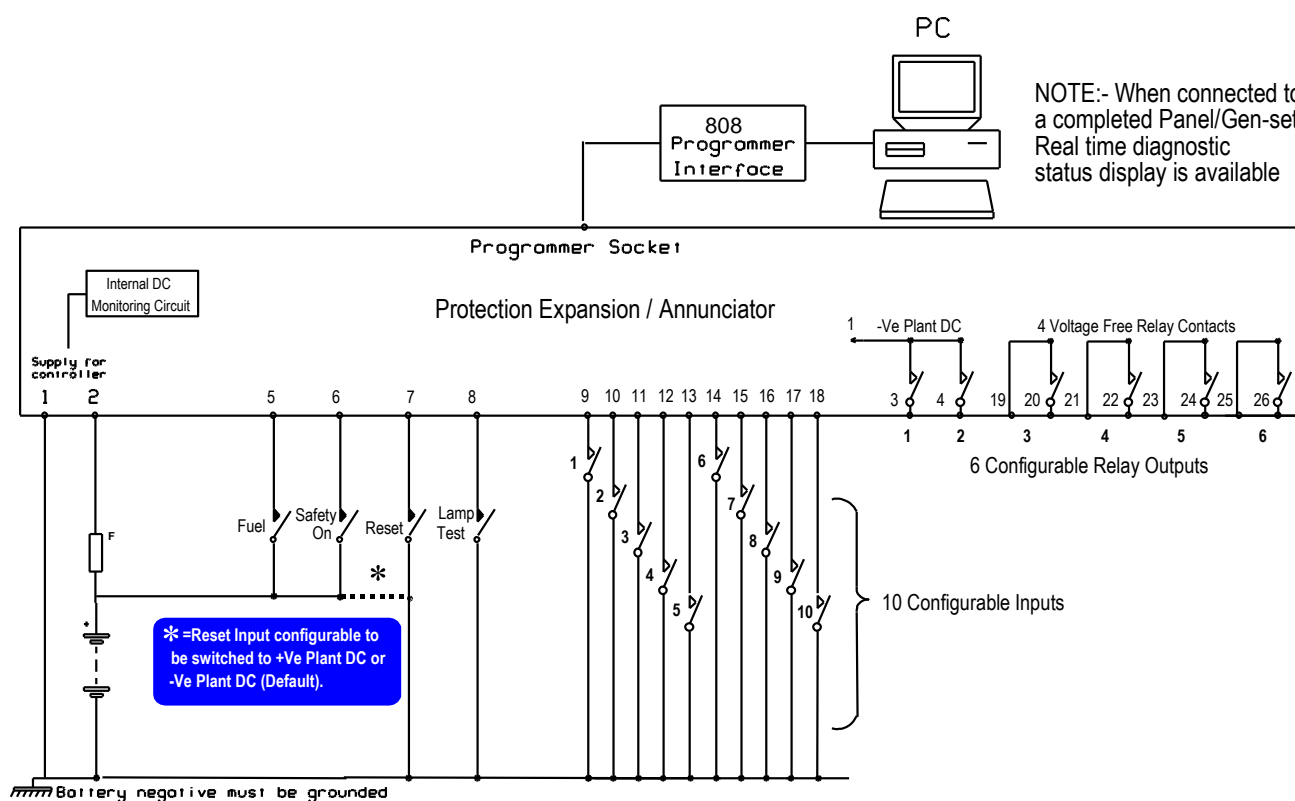
**Weight:**  
0.5Kg

**Operating Temperature Range:**  
-25 to +55°C

## CASE DIMENSIONS



## TYPICAL CONNECTIONS



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