



## DESCRIPTION

The 157 is an **output relay expansion module** for the 500 series modules. It can be configured to provide volt-free contacts, which allow the OEM to meet demanding specifications by adding to the capacity of the 500 Series.

The module comprises a single 'DIN' rail mounted module with an interconnecting FCC 68 cable. This enables rapid fixing into a panel to enhance the 500 Series and can be situated up to 50 metres away from the host module.

The relay expansion features eight, 5amp rated, voltage-free, relay contacts which can be configured to be normally de-energised, close on command, or normally energised, open on command.

The various 500 Series modules provide the commands. For instance, The 52x auto-start module has 32 different control sources from which to drive the relays, the 53x module has 53 different control sources from which to drive the relays, the 54x has 31 sources and the 55x modules have approximately 100 control sources. Future modules will also provide control source commands to the 157.

The relay expansion is an extension of the modules' output capabilities. Simply connect the relay board to a correctly configured module expansion socket.

On more complex panels or where comprehensive remote signalling is required then each control module in the system can be connected to a 157 relay expansion module.

On the 55x modules, two 157 relay boards can be used to give 16 independent relay outputs. This is achieved by identifying one of the 157 module as module 'A' and the other as module 'B' by means of a small selector switch fitted to the 157.

Using this modular approach and utilising the benefits of single wire host connection, complex specifications can be achieved, with minimum modification to standard panels.

Traditional methods would have required the use of a PLC based system or extensive additional relay logic with all its added complexity.

For a complete list of all the possible control sources for the 157 relay module, please refer to the appropriate configuration Software manual.

## CONFIGURATION

The module will automatically respond to signals from a correctly configured 500 series module. The module must be configured via the appropriate interface and a PC. The Expansion relays are numbered from 1 to 8 (and 9-16 on 55x modules only) and appear in the Output configuration menu. For more information on configuration and output states refer to the appropriate Software Manual.

**▲NOTE**  
When used in conjunction with P122 Digital Resistance, only P157 with part number 81xxx MUST be used.

**▲NOTE**  
The 157 Relay Expansion Module must only be connected to modules type 52X, 53x, 54x, 55x or future compatible modules. It will not function with Manual start module type 51x or the 509 AMF module.

**▲NOTE**  
Input expansion for all the modules can be achieved using the 540/541 Expansion Annunciator.



## SPECIFICATION

### DC SUPPLY :

The 157 is powered from the plant battery or from a low voltage supply between 8 to 35V Continuous. It is able to survive 0V for 50ms during cranking, providing supply was at least 10V before dropout and supply recovers to 5V. This is achieved without the need for internal batteries.

### MAX. OPERATING CURRENT:

120mA @ 12V, 70mA @ 24V.

### MAX. STANDBY CURRENT:

25mA @ 12V, 18mA @ 24V

### AUXILIARY RELAY CONTACTS:

5Amp DC rated voltage free.

### DIMENSIONS:

72 x 160 x 77 mm DIN Rail mounted housing.

### OPERATING TEMPERATURE RANGE:

-15 to +55°C

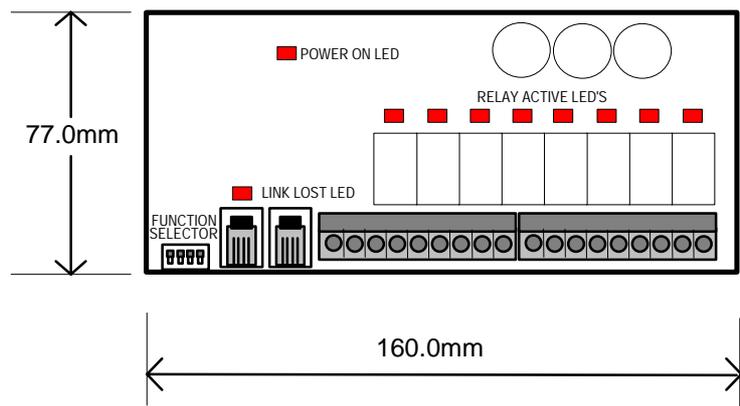
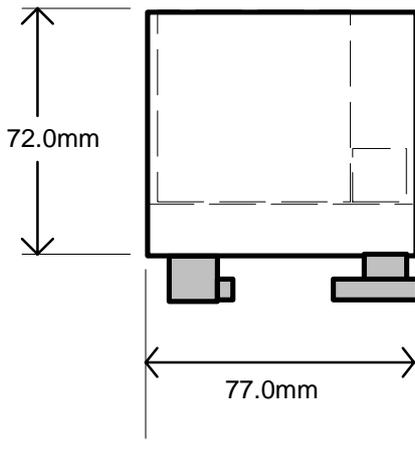
### SELECTOR SWITCHES:

Test - Operates all relays to test operation.  
Unused - No Function.  
Enable Lamp Test - Relays will energise on receipt of a Lamp test signal from Host module.  
A/B Select - Determines whether the 157 responds to signals for Expansion A or B relays - (See Note)

### INDICATIONS:

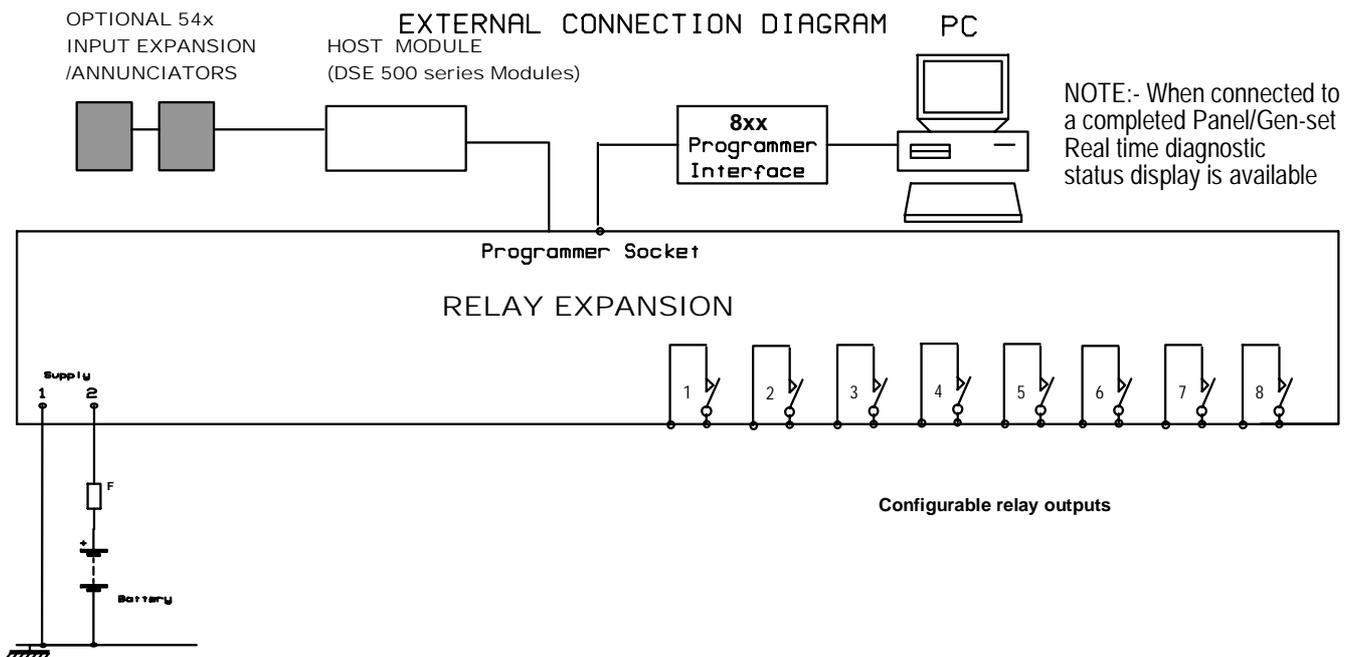
Power On LED  
'Link Lost' (to controller ) LED Flashing  
8 Relay active LED's

## CASE DIMENSIONS



157 Relay Expansion Unit Arrangement

## TYPICAL CONNECTIONS



**NOTE:** The 157 relay status is updated a minimum of twice a second. While this makes the response of the relays fast enough for annunciation, remote monitoring and normal system control it is not considered suitable for use in time critical applications such as high speed breaker tripping etc. If this type of function is intended we would recommend using the host modules own relay outputs to control such systems.

**NOTE:** The 157 must be used in the correct mode to function correctly. The 'A' mode is used to number the 157 Relays 1 through to 8. The 'B' mode is used to number the Relays 9 through to 16. Thus using one 157 in 'A' mode and one 'B' mode 157 give 16 independent Relays. Mode selection is via a function selector switch on the module.

The A/B selector switch must be set to the 'A' position for the 157 module to operate with 52x, 53x, and 54x Modules as these do not support 'B' mode.

Deep Sea Electronics plc

Highfield House, Hunmanby Industrial Estate, North Yorkshire, YO14 0PH, England  
Tel: +44 (0) 1723 890099 Fax: +44 (0) 1723 893303 E-mail sales@deepseapl.com