

Spectrum | 600 Series - Interface Unit

Introduction

The Interface Unit Forms a convenient method to connect external signals to the Spectrum Beacon. Up to 7 external input signals can be accommodated. In the absence of any input signal, the Beacon shows a silent continuous green display.

The input signals are internally prioritised, and only the signal with the highest priority will be displayed. Lower priority signals are not lost, however, and their appropriate outputs will be automatically displayed when the higher priority signal is cleared. The Beacon outputs for the seven different priority input signals are factory set. These are shown in the table overleaf.

It is not necessary to use all the inputs on the Interface, or to use them sequentially, but it should be remembered that the priority handling cannot be changed - input 7 will always be considered to be the highest priority and input 1 the lowest. This is obviously most important in applications where more than one signal may be present at any time, for example equipment state monitoring.

Input Signals

The Interface has provision for seven input signals. These are electrically isolated from each other, and from the rest of the Interface circuitry. In the circuitry.

Each input can be used with Ac or Dc signals. Separate input terminals are provided for Ac and Dc signals, only one of which should be used.

The limits on the input signals are:

Ac inputs from 230v to 24v, and Dc inputs from 48v to 12v.

A valid signal is one which changes from it's ground state to it's 'on' state when the signal is present, and falls back to its ground state when the signal is removed. There is no restriction on the rate of change of the input signal, however very slowly changing signals may present problems in interpreting the meaning of the Spectrum display.

Signal Handling

The input signal is conditioned to remove problems associated with spurious signals caused by contact bounce, contact racing, dirty contacts, random glitches etc. before being transmitted to the logic circuits via opto isolators.

In the logic section, the signals are prioritised and an output generated. If the output is of a higher priority it is compared to a previous signal held in memory. If a new signal matches that in the memory it is ignored. If the new signal is of lower priority to that being displayed then it is remembered by the prioritising circuit, but no further action is taken.

If the signal is different, the new signal is written to memory and the previous signal erased. The signal then existing in the memory is transmitted to the Spectrum Beacon via opto isolators.

The output signal transmission time is one count of the on-board clock, approximately 0,1 seconds.

Avoidance of Cross Talk

In order to minimise the effects of the external environment on the logical function, the included power supply unit has three separate power supplies. One is used as an auxiliary supply for use with volt-free external contact sets. One is used to transmit signals on and off the logic board. One is used to power the logic board, this has an incorporated back-up battery which, if fitted and fully charged, will support the logic circuit for 12 hours.

Interface Unit Power Failure

If the power to the unit should fail, or either of the on-board fuses should fail, a signal is generated in the form of a pair of volt-free contacts closing.

These are available at the screw terminals marked 'SIG' on the Power Supply board.

Interface Code No. 50165

MOFLASH 
SIGNALLING

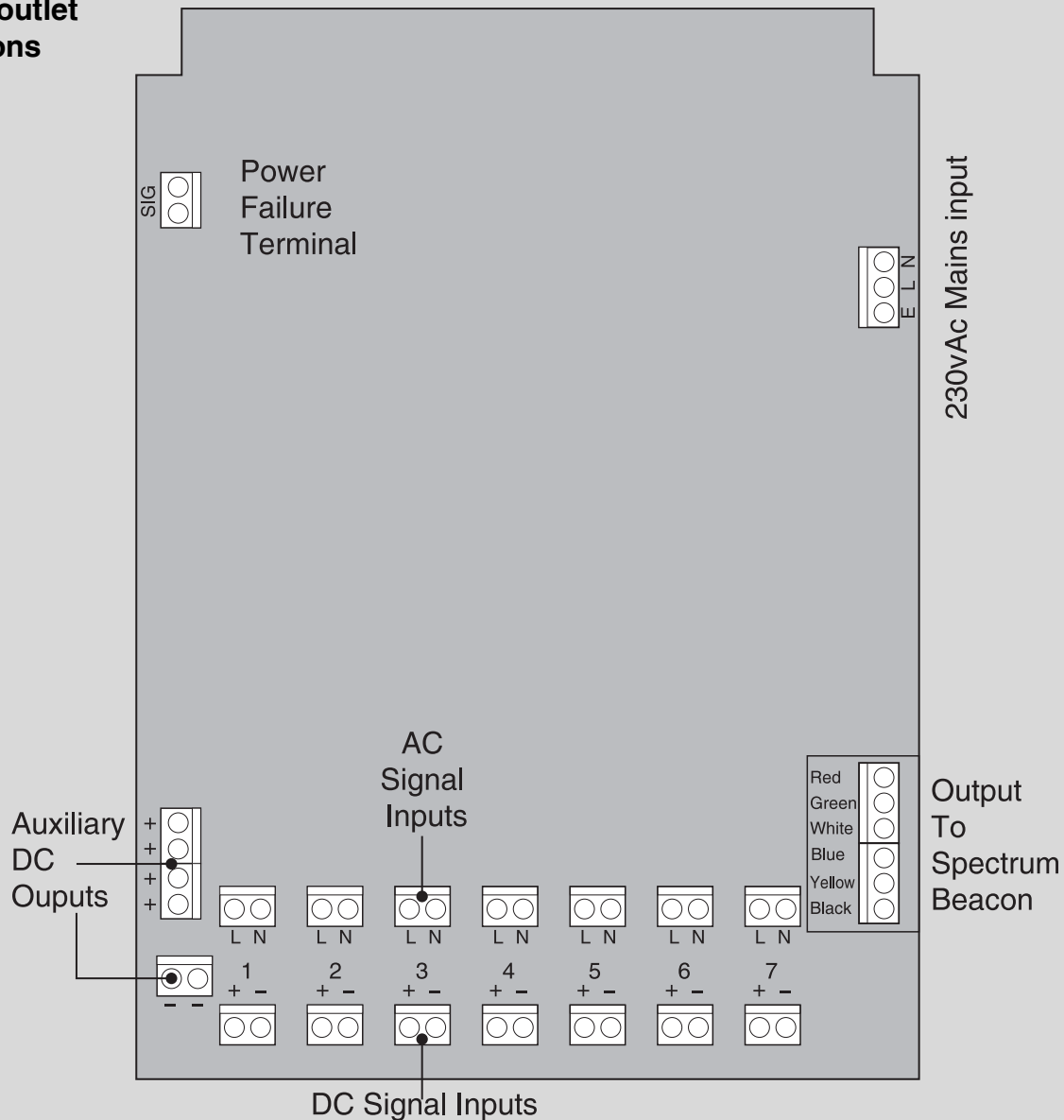
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PCB plan showing inlet and outlet connections



Output Signal Codes for Spectrum Interface

	Colour	Colour Mode	Sound
No input signal	Green	Continuous	None
Priority 1 signal	Green	Standard Flash	None
Priority 2 signal	Amber	Standard Flash	None
Priority 3 signal	Amber	Fast Flash	None
Priority 4 signal	Red	Standard Flash	None
Priority 5 signal	Red	Standard Flash	Synchronised with flash
Priority 6 signal	Red	Fast Flash	Synchronised with flash
Priority 7 signal	Red	Continuous	Continuous