

## 4500 Series Monitoring System

### General Overview

The 4500 series monitoring system is based upon a 19 inch 3U high rack assembly which can contain a mixture of different modules to achieve particular monitoring functions. The system is powered by a 4508 power supply module fed by either 110 or 240v AC.

The 4508 power supply is a single card construction with a 96 way multiple connector. This mates with a similar socket on the backplane PCB assembly which is mounted across the rear of the rack system. Various connection options are available to use with the basic rack system and they are explained more fully in the section dealing with the model 4524 rack assembly. The connections from the 4500 Series system to the outside world are via ribbon cable connectors mounted on the rack assembly backplane PCB.

### Module Fitting

When manufactured systems are to be supplied with monitors dedicated to particular slot position in the rack assembly, this is achieved by using a red keyed connector which ensures that a module cannot be placed in the wrong slot. In the general case, any type of module except for a power supply or a serial interface module can be inserted into position 1-13. Slot 14 is reserved for a 4506 serial interface module (if required) and the 4508 power supply will always occupy the extreme right hand position, slot 15.

### System Configuration

In normal circumstances a 4500 series system will be assembled to suit a particular customer's requirement and will have the appropriate modules fitted prior to shipment. Of the various modules available. All are separately described within this instruction manual. Each is described as though it were a standalone product, but of course it cannot be used on its own without the connection capability of the module 4524 rack assembly.

### Selection of Filter Components

Some of the 4500 series of monitors have internal filters which restrict their measurement band width to frequencies are of interest.

### Scaling

Modules are scaled to suit the customer's specific requirements.

### Linking Table

Modules in the 4501, 4502,4509,4510,4515 ranges have links fitted to the boards which are specific to the type of the module.

### Module Address Codes (where fitted)

When assembled as a system, modules are assigned address of 1 to 13. numbering from left to right when viewed from the front. Users may set internal switches to other addresses, but must take care to ensure that no two modules are set to the same address. Where no serial interface module is specified for the system, the address code switches and associated components may not be fitted.

**4500 Series Monitoring System  
Model 4510 Dual Path  
Vibration Monitor**

by illuminating a green LED on the front panel when this bias voltage is present.

Also located on the front panel is a BNC connector which makes available (to portable analysis equipment), the input signal to the monitor, via an amplifier.

### **General Overview**

This unit is a dual channel device but having a common input signal. This is normally an acceleration signal derived from a CML accelerometer. It is being passed to both channels for separate filtering and processing. The input sensitivity can be set to either 10mV/g or 100 mV/g.

The application of this module is in those areas where not only the rotational component of vibration is of interest, but a higher frequency such as blade passing or gear meshing frequency needs to be monitored.

Channel1 is set to accept the incoming signal and maintain it as an acceleration signal throughout, returning a value proportional to rms acceleration via 4-20mA output.

The same acceleration signal is integrated in channel 2 and so the 4-20mA for this channel is proportional to rms velocity.

Filters are configured to suit particular contract requirements.

Scaling is also set by choice of appropriate components, and should not be changed without reference to CML.

When operating correctly, the transducer output includes a DC bias, on which is superimposed the AC vibration signal. This DC bias is continuously monitored by the 4510 module which indicates a healthy state