



The 487 is used as the main amplifier in DC systems employing current source detectors such as photomultipliers and photodiodes (eg. Si, Ge, InGaAs) which, at low frequencies, give their best performance when connected to a virtual ground. The typical spectral range over which these detectors, and therefore this amplifier, are used is 180nm to 1700nm.

The virtual earth inputs (two) of the amplifier ensure that the detector is kept in short circuit condition, whereby no voltage is generated across the detector as a result of the photocurrent it produces. Short circuit operation enhances the linearity of detectors, reduces the effect of cable capacitance and is often a necessary condition in the determination of detector responsivity.

The 487 is a double-width module, housed within the 417/417T mother unit.

Gain range and input in use may be selected via the USB interface, over which is passed the measurement result and range over-load/ under-load flags from the A to D converter.

Core Features

- Six decade transimpedance amplifier
- Up to 10^{10} V/A gain
- Dual Input for use with multiple detectors
- Virtual ground input
- Integrating ADC
- 100ms ADC integration time
- Fully programmable via USB interface through 417 unit

Specification	
Inputs:	2, remotely/manually selected
Gain Ranges:	10^{10} - 10^5 V/A
Maximum Input:	100 μ A
Frequency Response:	DC to 30Hz
Input Impedance:	Virtual earth
Gain Accuracy:	+1%
Gain Stability	200ppm/ $^{\circ}$ C
Output Stability:	5ppm/ $^{\circ}$ C to 500ppm/ $^{\circ}$ C depending on sensitivity
Interface:	USB (via 417/417T mother unit)
Resolution	4½ digit BCD (0 to 19999) i.e. > 14 bit resolution
ADC Conversion	100ms
ADC Input Range	-0.2V to 9.8V
Linearity	< 0.025% departure from linearity from zero to full scale