



## MULTI-CHANNEL RADIATION DETECTOR

The model 101-HDC3 is a radiation detector system intended for radiochemical synthesis and process monitoring applications in laboratory hot cells. The system comprises a set of up to three miniature detector probes, plus a three-channel transresistance (current-to-voltage converter) amplifier.

The maximum gain of the transresistance amplifier in each detector channel is nominally  $5 \times 10^9$  ohms, that is, a detector current of one nano-ampere can produce a voltage at the output of the amplifier of five volts. A multi-turn trim potentiometer on the output of each amplifier chain allows the user to adjust the overall transresistance gain of the system over a range of approximately 10:1.

The active element in the detector probe is a silicon PIN diode which is enclosed in a small metal capsule to shield it against light and stray electromagnetic fields.

Each probe is connected to its amplifier through a length of small-diameter coaxial cable. The detector probes operate in "DC" mode and are intended to be used in close proximity to concentrated sources of gamma-emitting radionuclides. The output of each detector/preamplifier channel may be monitored by any high -impedance recording device: voltmeter, chart recorder, computer data acquisition system, etc.

