CHROM. 6254

## A simple, noise-free, starting-point generating device for liquid chromatography

Recently two papers have been published concerning a simple, low-cost starting-point generating device for column chromatography[1,2]. Both employ the same principle: the microsyringe used to introduce the sample into the chromatograph serves as a microswitch and actuates an electronic circuit to generate the starting signal. This signal is fed to the recorder.

We have attempted to use the same construction with our Varian Aerograph Type 4010 liquid chromatograph with a 1 mV strip chart recorder, and found that the system suffers from excessive external noise, even when screened wires were used.

It is assumed that the syringe is responsible for this effect, as it cannot be efficiently screened. When it is full of sample it has a high, but finite, resistance and picks up external noise. Based on this assumption we have modified the original circuit, although still keeping it simple. The new circuit diagram is shown in Fig. 1. The original signal-generating part of the circuit, the cell, the resistor and the capacitor, is wired directly to the recorder terminals, using short, screened wires. Instead of the syringe microswitch used in the original circuit, a simple, low-voltage magnetic relay was employed. The input terminals of the relay were wired to a cell and then to the microsyringe. Thus the signal generating electrical circuit and the actuating circuit were essentially separated and proved to be free of noise.

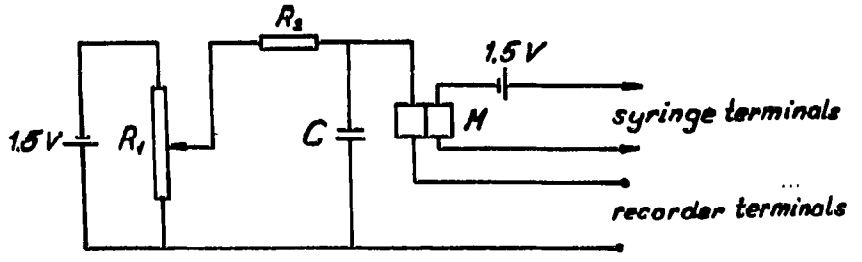


Fig. 1. Circuit diagram of starting-point generating device: $R_1$, variable resistor of 1 M$\Omega$; $R_2$, resistor of 470 k$\Omega$; C, capacitor of 20 $\mu$F; M, magnetic relay of 50 mA.

The need for the use of screened wires in the actuating circuit was also eliminated and only one thin flexible wire was required for earthing the injection block, thus allowing simpler handling of the syringe.

*Institute for Analytical Chemistry,*
*University of Chemical Industries,*
*Veszprém (Hungary)*

GYULA VIGH

1 R. L. HOFFMANN AND C. D. EVANS, *J. Gas Chromatogr.*, 6 (1968) 1.
2 R. F. SKINNER, *Anal. Chem.*, 43, No. 10 (1971) 1352.

Received June 14th, 1972