

Interfacing the Graseby 3400 syringe pump to an IBM-compatible PC:
a programme to facilitate propofol anaesthesia¹

Nickalls RWD² and Gatt D,

Department of Anaesthesia,
University Hospital, Nottingham, UK.

SCATA³ meeting, Grantham, UK, (May 4–6, 1994)

Abstract

A PC-based system for driving a Graseby 3400 syringe pump is demonstrated. The system uses a QuickBASIC programme to sustain propofol anaesthesia via the RS-232 serial interface. The system is designed to be an aid for the anaesthetist and while maintaining anaesthesia collects accurate data in a log file regarding infusion rate, dose delivered, and times of infusion-rate changes. The programme is designed to be started immediately following induction.

After entering the patient's weight (Kg), and propofol concentration (10 or 20 mg/ml), the programme executes the commonly used 10–8–6 mg/kg/hr regimen of Roberts *et al.*(1988). At any time the infusion rate can be altered within the range 1–12 mg/kg/hr simply by pressing the <ESCAPE> key and then selecting the appropriate Function-key (F1–F12). Giving a bolus of the drug using the syringe pump's own keys automatically suspends the computer program, as does refilling/changing the syringe.

The computer maintains two log files, namely an infusion dose, infusion rate, time log, and an optional communications traffic log which gives the content of all commands and replies passed to and from the pump. Enabling the communications log is particularly useful when debugging any changes made to the program.

The programme, together with comprehensive details regarding interfacing the Graseby 3400 syringe pump, is given in Nickalls and Ramasubramanian (in press).

REFERENCES

Nickalls RWD and Ramasubramanian R. *Interfacing the IBM PC to medical equipment: the art of serial interfacing*, Cambridge University Press (in press).

Roberts FL, Dixon J, Lewis GTR, Tackley RM and Prys-Roberts C (1988). Induction and maintenance of propofol anaesthesia: a manual infusion scheme. *Anaesthesia*, 43, Supplement, 14–17.

¹Abstracts: Papers presented at the Grantham meeting, *SCATA News*, Autumn 1994 (issue No. 6), page 8.

²dick@nickalls.org

³Society for Computing And Technology in Anaesthesia.