

## APPENDIX

### FLOWTEK SET-UP

#### 1) Connecting the devices

A device is an analytical instrument or component that needs to be controlled by this software. A selection valve and a peristaltic pump were used in this work. These devices were connected to digital output points on the distribution board.

#### 2) Programming the function keys

The function keys F3 to F9 were configured to send output to the digital output ports. This allows a way of switching the devices without having to define a method or manually controlling each device. In the "set-up" menu under the "function keys" option, the function key to be programmed is chosen and the number to be sent to the digital port is entered. This was done as shown in table 1.

Table 1

Function key	Number
F3	1
F4	2
F5	4
F6	8
F7	16
F8	32
F9	64

#### 3) Testing connection of the devices

When a certain function key was pressed, it enabled a particular device to perform a certain action. The findings are shown in table 2.

Table 2

Function key	Device	Action
F5	Selection valve (SV)	Home (H)
F6	Selection valve	Advance (A)
F7	Peristaltic pump (PP)	Off (O)
F8	Peristaltic pump	Forward (F)

This data then corresponded to the positions on the distribution board to which the devices had been connected as depicted in table 3. It was not necessary to pump in the reverse direction in the methods used, so this action was not specified.

Table 3

<b>Number</b>	1	2	4	8	16	32	64	128
<b>Output port</b>	1	2	3	4	5	6	7	8
<b>Device</b>			SV	SV	PP	PP		
<b>Action</b>			H	A	O	F		

#### 4) Specify the devices

The type of devices and the digital output port to which it is connected were specified as in table 4.

Table 4

<b>Type of device</b>	SV	3
<b>Digital output port</b>	PP	5

#### 5) Configuration of devices

The devices were configured as shown in table 5.



Table 5

Device number	7		8	
Device name	SV		PP	
Number of actions	2		2	
Narration of actions	H	A	O	F
Digital output of action	1	2	0	2
Hot key	H	A	O	F
Pulse length (0 for continuous)	0.1		0	

### 6) Building methods and procedures

The methods are built by specifying the duration of the method and then specifying a time during the method when a particular device must perform a certain action. Procedures can be built by running a number of methods after each other and/or by repeating a method or procedure a specified number of times.