

## Effluent Monitoring with the 2700 SELECT

### I. Introduction

Effluent systems such as a waste water line can now be monitored using the 2700. With an IBM compatible computer, and some additional hardware, this program will set off alarms when the concentration in an effluent system exceeds a predetermined threshold. All sample data will be saved in an ASCII file on the computer. This program is designed to work on an IBM compatible computer running MS-DOS.

### II. Equipment

- A. YSI 2700 SELECT Biochemistry Analyzer
- B. YSI 2712 Monitor Accessory
- C. YSI Effluent Monitoring Disk
- D. Kiethley Model PDISO-8, available from Kiethley Metrabyte Co., Taunton, MA. (This equipment is used to connect the alarms and the computer so they can talk to each other.)
- E. IBM compatible computer
- F. NULL modem cable, (refer to the 2700 manual, Section 9)
- G. Alarms, signals and switches

### III. Hooking up the 2700 to your computer

To connect the YSI 2712 Monitor Accessory and the Kiethley PDISO-8, refer to their respective manuals. Connect the NULL modem cable to the remote port on the back of the 2700. Connect the other end of the cable to a serial port on your computer.

### IV. How to set up the 2700

Under the MENU mode of the 2700, enter the SETUP menu. First set up the 2700 chemistries as you normally would under "Measurement Parameters", (refer to the 2700 manual). Chemistries should be in the units of mg/L to correlate with the program.

Next enter the "General" category under the SETUP menu. Under the RS232 category, the communication parameters can be set.

The following parameters are recommended:

Baud:	1200
Data:	7 bit
Parity:	even
Stop bits:	one
Handshake:	none
Configuration:	non-multidrop

You may now put the 2700 in RUN mode.

### V. Connecting the alarms to the system

To connect the computer to the alarms requires the use of the Kiethley PDISO-8. The PDISO-8 should be installed in the computer according to the instructions in the PDISO-8 manual. The alarms should be installed according to Figure 1 - "SCHEMATIC:Alarm Connection to PDISO-8."

### VI. Operation of the effluent monitoring program

**NOTE:** [E] will be used in place of enter or carriage return.

- A. To start the program, you must first insert the "Effluent Monitoring" disk into the disk drive.
- B. Type MON, press [E]. In a few moments, the program will load and display the main menu.
- C. Use the cursor keys to highlight "Setup", press [E].
- D. Use the cursor keys to highlight "Communication Parameters", press [E].
- E. The cursor keys can be used to scroll through the values. The enter key should be used to select the value wanted and to continue to the next parameter. Parameters 1-6 should agree with those parameters setup on the 2700.
- F. Parameter 7, the communications port number must agree with the port used to connect the computer. Example: com1, com2, etc.
- G. Highlight "Log File Name" using the cursor keys, press [E].
- H. Enter the file name where the sample data are to reside\*, press [E]. Example: A:\your directory\your file  
 \* If no disk drive is indicated by a letter before the filename, then the data will be saved in the drive\ directory that you are currently logged.
- I. Highlight "Analyte Thresholds", press [E].
- J. Use the cursor keys to scroll through the chemistries and the enter key to select the chemistry to monitor.
- K. Next enter the concentration that will be the threshold, press [E]. Any concentration higher than the threshold will send a signal that will sound the alarms.
- L. Repeat steps J and K for the next chemistry if needed.
- M. Highlight "PDISO-8 Base Address" on the computer screen, press [E]. Enter the number that corresponds with the decimal equivalent of the address line of the PDISO-8, press [E]. Refer to the Manual for the PDISO-8 to explain the decimal equivalent.
- N. Press escape once to return to the main menu.

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## VII. To Start Monitoring

First make sure the 2700 is in RUN mode. To start monitoring, highlight "Start" with the cursor key and press [E]. The program will begin. There will be four windows on the computer screen. The largest window will give a read out of the concentrations that are measured by the 2700. The middle window will give you the status of the alarms. The lower left window will give the status of the program, and the lower right will give the status of the 2700.

Any data already stored in the 2700 will now appear in the larger window and be compared to the threshold concentration. As new data become available, the program will compare those concentrations to the threshold concentrations. If either of the analyte concentrations exceed the threshold, then a signal will be sent through the PDISO-8 and the relays will be energized. When this happens, a small box will appear in the larger window, indicating a high concentration, and a global alarm will sound on the computer. This alarm can be reset by hitting the X key, or silenced locally by pressing the S key. The three alarms located at various critical points in the plant will continue to sound until they are turned off at those locations using push buttons or the 2700 takes a reading that is below the threshold concentration.

To view past data, press escape once to return to the main menu. Use the cursor keys to highlight "View Data", press [E]. The U key will move the screen up and the D key will move the screen down.

If you wish to shut the program down, return to the main menu and press escape to return to the operating system. To shut down the 2700 refer to the 2700 SELECT Manual.

## VIII. Troubleshooting

If, when attempting to run the program, the screen indicates RUN Mode has been terminated:

1. Check all connections.
2. Check the cable type.
3. Check the communication parameters on the 2700 and the computer.
4. Check the 2700 to make sure it has not exited run mode. Use the 2700 SELECT manual, Section 8, to troubleshoot problems with the instrument.

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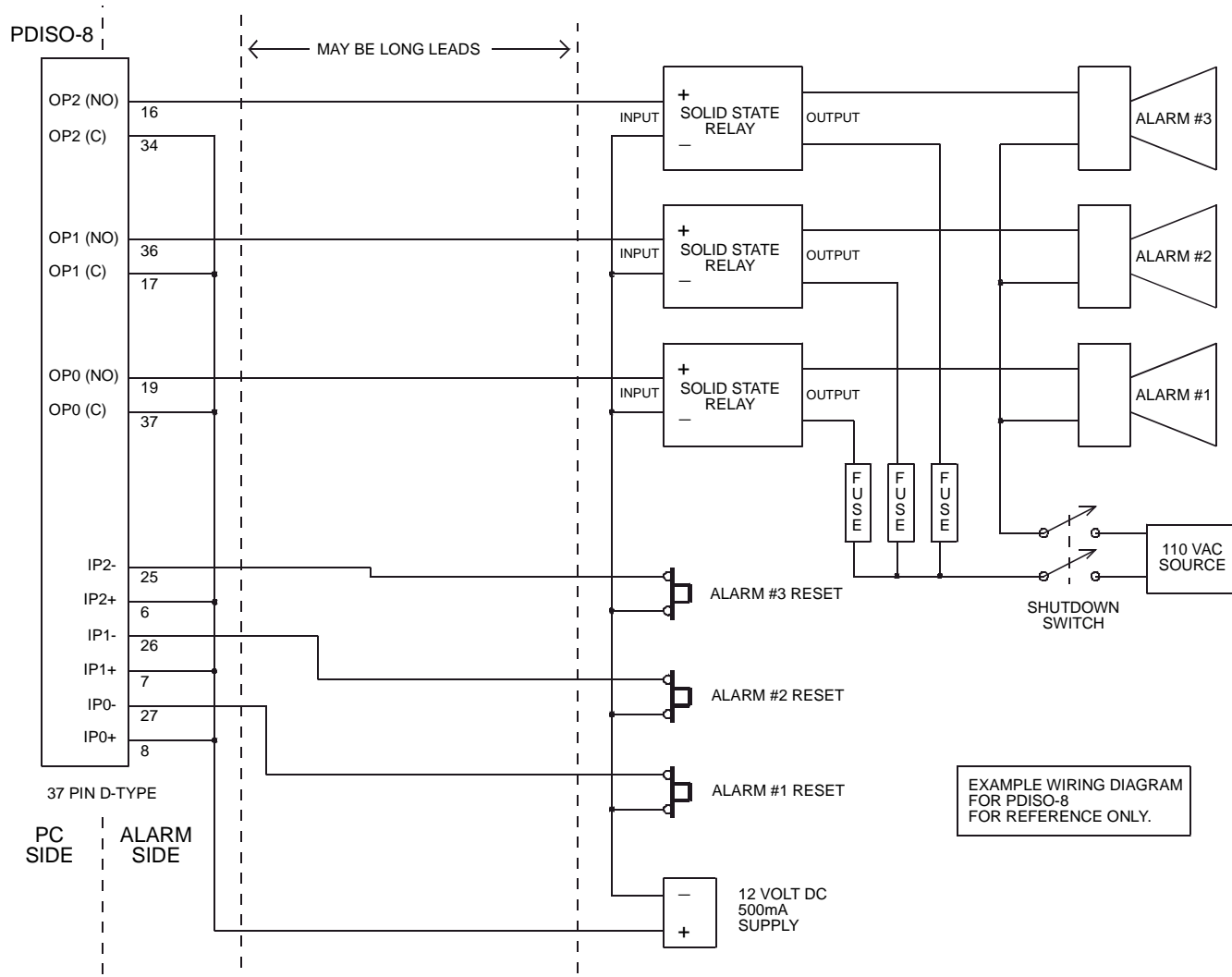
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**Figure 1 Schematic: Alarm Connection to PDISO-8**

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