Programmable Ramp/Soak Input Board Part Locations

SW2
Left is ON
Right is OFF

SW1
Left is ON
Right is OFF

F1 Excit. Fuse

E10, E11, E12

E7, E8, E8

E4, E5, E6   E1, E2, E3
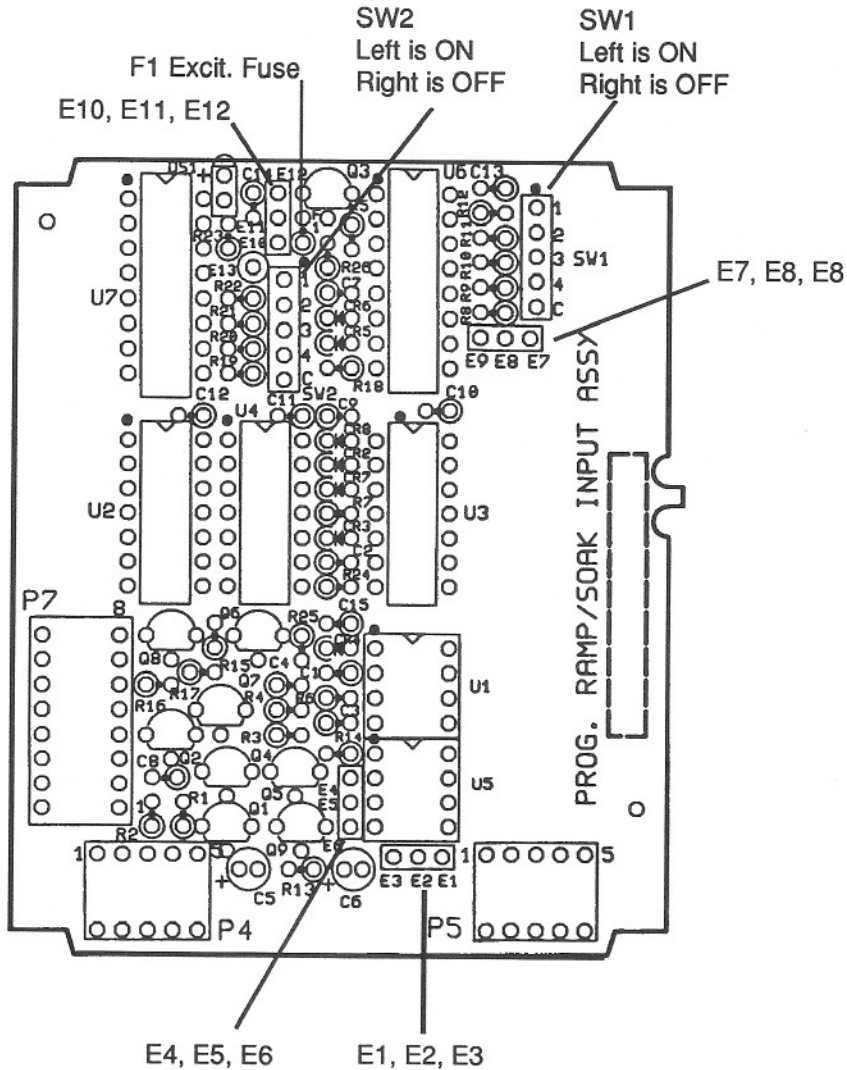
Specifications

Setpoint, Soak & Ramp Rate Inputs: Pot (1kΩ-10kΩ) or 0-5VDC
Input Impedance >1MΩ
Overload Protection 250VAC or VDC

Hold & Reset Inputs: Open Collector TTL or Contact Closure
100kΩ pull up

Status Indicator: LED; turns on at setpoint and off at end of soak time.

Voltage to Frequency Resolution (soak & ramp rate):≈1mV/Hz
linear 0-5V input

Ramp Rates to Max Output: 275ms >500 hours

Soak Times: 125ms to > 113 hours

External Ramp Rate Clock: TTL Compatible

Output Span: 0-1.33V (adjustable)

Output Droop During Hold or Soak: None

Potentiometer Excitation Voltage: 5V at 5mA (fused)
Note: To use this output, header pin E13 (on input board) must be connected to any unused base pin on the Distribution Board.

For general Series 8000 specifications, see the Series 8000 manual, which provides general information for the entire series.

Setup Procedure

I.   Disassemble the Series 8000 unit as described on page 6 of the main manual.
II.   Remove the Programmable Ramp/Soak Input and Function Boards.
III. Set up the boards as described below.
IV.   Calibrate as described in the main manual. Note that the function board must be in place for the unit to be operational (do not attempt to calibrate without it).
V.   Reassemble the unit as described in the main manual, pages 4 to 6.

2800-4020-01C

Setup Instructions

Selecting Internal Frequency or External Frequency Source
To use the internal voltage to frequency converter, set the following pin jumpers:
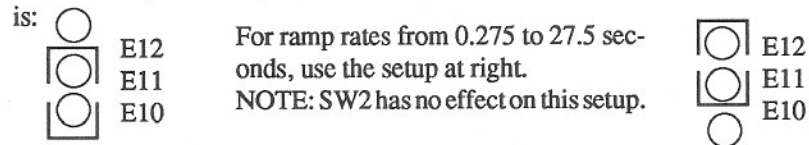(This is the standard factory setting.)

E1 E2 E3   E4 E5 E6   E9 E8 E7
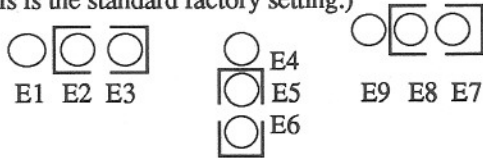
To use an external ramp clock source (5V TTL), set the following pin jumpers:

E1 E2 E3   E4 E5 E6   E9 E8 E7

Setting the Ramp Rate
Normal ramp rates vary from 0.55 seconds to more than 500 hours. Normal setup is:

E12
E11
E10

For ramp rates from 0.275 to 27.5 seconds, use the setup at right.
NOTE: SW2 has no effect on this setup.

E12
E11
E10

Ramp rate is dependent on the specific switch settings of SW2, the voltage coming into the ramp input, and the setpoint voltage. The input value can range between 0V and 5V. The clock rate of the counter is determined by the input voltage. Note that the range is linear (an input of 2.5V gives a ramp rate one half that of 5V). Refer to the following table to determine the range appropriate for your application. The table assumes a setpoint of 5VDC, full-scale output.

Calibration
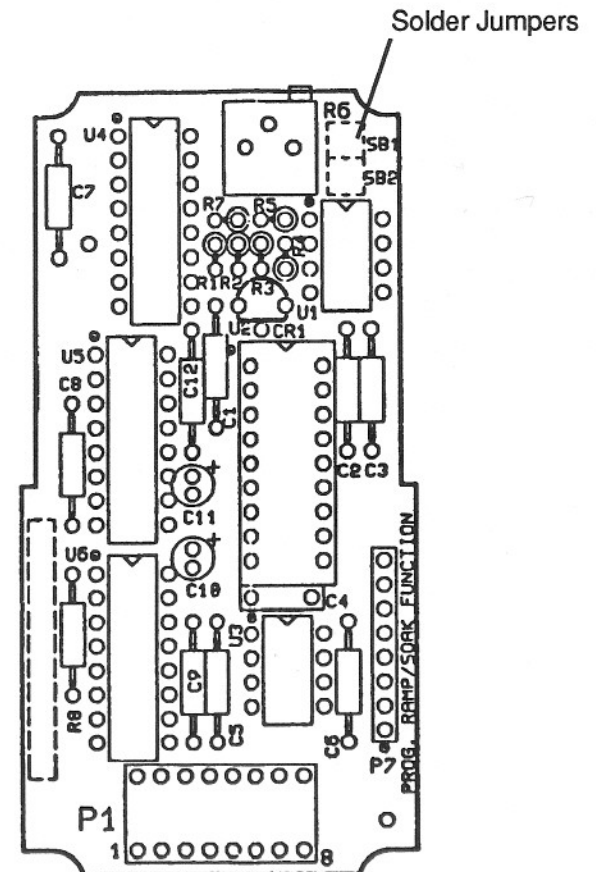
Step A. Setting ZERO
1. Set Ramp Rate to maximum.
2. Set Setpoint to maximum.
3. Close Reset with an external contact closure.
4. Adjust ZERO on the Output Board for maximum output.

Step B. Setting SPAN
1. Open Reset lines.
2. Verify output can be adjusted to maximum output by adjusting Setpoint around maximum.

Programmable Ramp/Soak Function Board Part Locations

Solder Jumpers

Ramp Time

SW2 1 2 3 4	÷ U7	@ 5V V/F = 4096Hz Hrs	Min	Sec	@ 2.5V V/F = 2048Hz Hrs	Min	Sec	@ ≈ 0V V/F = 40.96Hz Hrs	Min	Sec
0 0 0 0	2	-	-	0.55	-	-	1.1	-	-	55
0 0 0 1	4	-	-	1.1	-	-	2.2	-	1	50
0 0 1 0	8	-	-	2.2	-	-	4.4	-	3	40
0 0 1 1	16	-	-	4.4	-	-	8.8	-	7	20
0 1 0 0	32	-	-	8.8	-	-	17.6	-	14	40
0 1 0 1	64	-	-	17.6	-	-	35.2	-	29	20
0 1 1 0	128	-	-	35.2	-	1	10.4	-	58	40
0 1 1 1	256	-	1	10.4	-	2	20.8	1	57	20
1 0 0 0	512	-	2	20.8	-	4	41.6	3	54	40
1 0 0 1	1024	-	4	41.6	-	9	23.2	7	49	20
1 0 1 0	2048	-	9	23.2	-	18	46.4	15	38	40
1 0 1 1	4096	-	18	46.4	-	37	32.8	31	17	20
1 1 0 0	8192	-	37	32.8	1	15	5.6	62	34	40
1 1 0 1	16384	1	15	5.6	2	30	11.2	125	9	20
1 1 1 0	32768	2	30	11.2	15	0	22.4	250	18	40
1 1 1 1	65536	5	0	22.4	10	0	44.8	500	37	20

0 = switch closed, 1 = switch open

Setting the Soak Rate

Soak rate is dependent on the specific switch settings on SW1, and on the voltage coming into the soak input. The input value can range between 0V and 5V. The clock rate of the counter is determined by the input voltage. Note that the range is linear (an input of 2.5V gives a soak rate twice that of 5V). Refer to the table below to determine the range appropriate for your application.

Soak Time

SW1 1 2 3 4	@ 5V V/F = 4096Hz Hrs	Min	Sec	@ 0V V/F = 40.96Hz Hrs	Min	Sec
0 0 0 0	-	-	0.125	-	-	12.5
0 0 0 1	-	-	0.250	-	-	25
0 0 1 0	-	-	0.500	-	-	50
0 0 1 1	-	-	1	-	1	40
0 1 0 0	-	-	2	-	3	20
0 1 0 1	-	-	4	-	6	40
0 1 1 0	-	-	8	-	13	20
0 1 1 1	-	-	16	-	26	40
1 0 0 0	-	-	32	-	53	20
1 0 0 1	-	1	4	1	46	40
1 0 1 0	-	2	8	3	33	20
1 0 1 1	-	4	16	7	6	40
1 1 0 0	-	8	32	14	13	20
1 1 0 1	-	17	4	28	26	40
1 1 1 0	-	34	8	56	53	20
1 1 1 1	1	8	16	113	46	40

0= switch closed, 1= switch open