



Sloflo In-line Heater SF-28G

SF-28G is designed for use with a manually adjusted 12 volt dc power source. If a power source of more than 12 volts is used, care must be taken to limit the output to 12 volts maximum.

OPERATION

1) Connect the red and black banana plugs to the output terminals of the power source. Set the output amplitude to zero or its minimum level.

2) Connect the remaining white and green banana plugs to a digital multi-meter and select ohms to read approximately 10kΩ. This is the resistance reading from the thermistor in the heater.

3) TUBING INSERTION - SF-28G is used with PE-160 polyethylene tubing or any tubing with a 1/16" (1.5 mm) OD. Insert a short length (to mount the heater as close to the chamber as possible) into the heater output. Connect the feed line from the solution reservoir to the heater input.

4) Set flow rate to the desired level and turn the power to the heater on.

5) Gradually increase the voltage to the heater in 1-2 volt steps while monitoring the thermistor readings. Resistance will decrease with increasing temperature per the chart below. Use smaller increments as the desired temperature is approached. Allow a minute or two between adjustments for the readings to stabilize.

USING WITH A CHAMBER

6) Connect the heater output to the chamber with as short a length of tubing as practical to minimize heat loss.

7) Connect the TA-29 thermistor assembly to the multi-meter and place the bead thermistor into the bath, preferably in the area where the specimen will be located.

8) Start the solution flow and turn power to the heater on. Allow a few minutes for the system to stabilize. Readjust the controls to obtain the desired temperature reading.

9) Readjustment of the heater voltage will be required if any of the following change substantially:

- 1) Solution flow rate
- 2) Temperature of solution to the heater input
- 3) Ambient (room) temperature

OUTGASSING - A common problem with rapid heating of solutions, especially oxygenated solutions, is that of outgassing. The bubbles can often cause blockages or disruptions to the flow in the chamber bath. When this occurs, the usual effective solution is to provide prewarming of the perfusate either at the reservoir or in the feed lines.

MAINTENANCE

Salt solutions are very corrosive and can shorten heater life if left in the heater when not in use. The heater should be flushed with water, preferably distilled, after each use and then blown out to eliminate moisture while in storage.

For additional technical information, call:

Tel: 800-599-4203 US & Canada only

Fax: 203-776-1278

Temp. in °C		Resistance in Ohms			
Temp	Resistance	Temp.	Resistance		
16	14997.7	28	8777.79	39	5546.53
17	14321.6	29	8408.68	40	5327.34
18	13679.8	30	8057.31	41	5117.97
19	13070.4	31	7722.43	42	4917.94
20	12491.6	32	7403.29	43	4726.77
21	11941.6	33	7098.42	44	4543.91
22	11418.9	34	6808.36	45	4369.33
23	10922.0	35	6531.31	46	4200.84
24	10449.5	36	6265.75	47	4040.81
25	10000.0	37	6016.47	48	3889.51
26	9572.32	38	5776.05	49	3743.17
27	9165.29			50	3603.10