

HALLIKAINEN

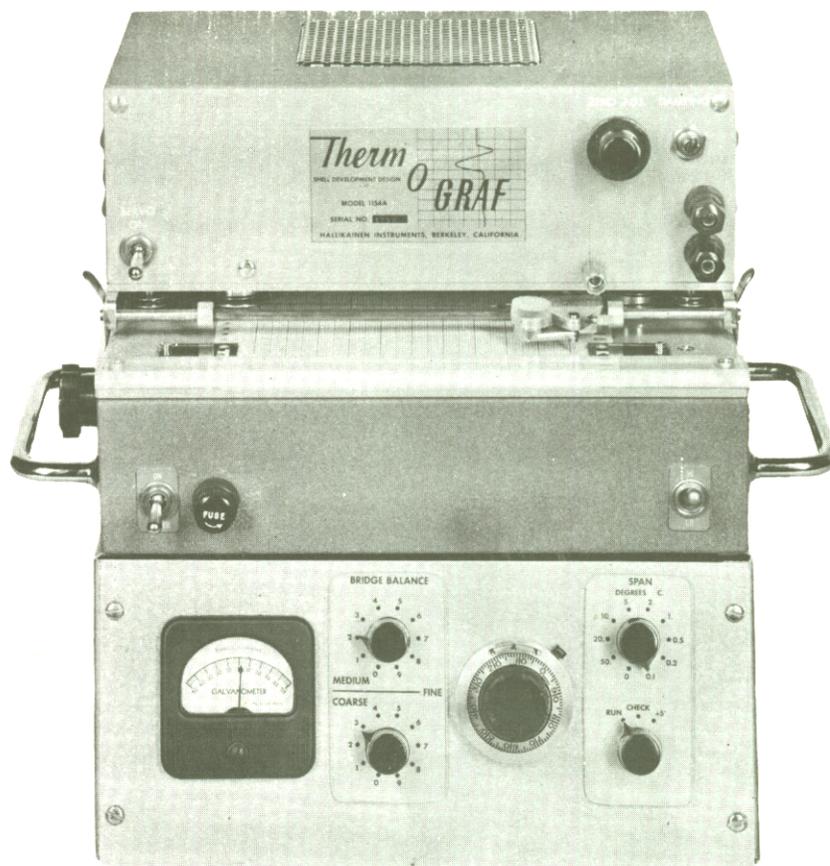
Instruments

INDUSTRIAL and SCIENTIFIC

750 NATIONAL COURT, RICHMOND, CALIFORNIA, 94804

THERMOGRAF

Shell Development Co. design



Model 1154

A resistance thermometer bulb of special design is used with this recorder as the primary element. Any resistance type transducer may be used if it is correctly calibrated.

The SPAN calibration can be checked by substituting known resistors (located within the instrument) for the resistance thermometer. To do this, the lower right hand knob is set at "CHECK" position, the recorder is balanced to read 0 and/or the galvanometer to indicate 50 (extreme left). The "SPAN" knob is set at 5.0°C. The galvanometer should read 50 or extreme right position and the recorder 100. If they do not, internal adjustments are provided to obtain correct setting.

The recording portion of this instrument is a Varian Model G-10 Recorder. It has a range of 100 millivolts, 2-1/2 second pen speed and a chart speed of 4' or 40' per hour. The chart supplied is a 5' graduated chart with a range of 0 to 100 with 100 equal divisions. Therefore, when used on a full scale range of 0.1°C, each line on the chart would represent .001°C.

Model 1194A resistance thermometer bulb supplied as standard equipment with the recorder has a range of -70°C to 300°C and is supplied in a stainless steel sheath 18" long (2" sensitive portion) by 1/4" O.D. and .005" wall thickness. Other ranges and bulbs can be provided on special order.

The Hallikainen-Shell THERMOGRAF was designed to measure and record increments of temperature, not absolute temperature. The various full scale ranges available with each instrument are 0.1°C, 0.2°C, 0.5°C, 1.0°C, 2.0°C, 5.0°C, 10.0°C, 20.0°C and 50.0°C. For example, if the temperature variation is to be measured in a bath operating at 100°C, the lower right hand knob is set to the "RUN" position and the "SPAN" knob to 50°C. The bridge balance controls "COARSE", "MEDIUM" and "FINE" (Helipot knob) are adjusted until the galvanometer or recorder pen are in mid-scale position. The "SPAN" knob then is turned clockwise to reduce the span to the desired full scale increment of 20.0°C, 10.0°C, 5.0°C, etc., balancing, if necessary, by using the fine adjustment knob of the bridge (Helipot). Full scale galvanometer readings correspond to full scale recorder readings.