DEPARTMENT OF

TRADE AND COMMERCE
CANADA

S-EA.451

STANDARDS BRANCH

OTTAWA May 26, 1960.

TYPE APPROVAL

KENT "MULTELEC MARK II M/MV/S"
SINGLE POINT, STRIP CHART POTENTIOMETER RECORDER

The apparatus specified and illustrated herein has been duly approved by the Standards Branch under the provisions of the Electricity Inspection Act, Chapter 94, R.S. 1952, and may be admitted to verification in Canada.

Apparatus Approved: "Multelec Mark II M/MV/S" Single Point, Strip Chart Potentiometer Recorder, manufactured by George Kent Ltd., Luton and London, England, and distributed in Canada by George Kent (Canada) Ltd., Toronto 14, Ontario.

Rating of Apparatus:

Millivolt Input*	Ranges from 0-6 mv. to 0-2000 mv. D.C.
Record	Continuous line
Current Standardization	Automatic - 45-minute period
Chart	9-7/8"
Scale	9-7/8" and 10" calibrated width
Maximum External Resistance	CDRX value shown on nameplate
Chart Speeds	1, 2 and 3 inches per hour
Supply Voltage	110-115 volts or 200-250 volts
Supply Frequency	60, 50 or 25 cycles

* Note: The kilowatts, megawatts, or other power function which the millivolts represent shall be shown on the nameplate or scale.

Description: The "Multelec Mark II M/MV/S" is a single point indicating and recording potentiometric instrument having a minimum millivolt range of 6 mv. D.C. and a maximum range of 2 volts D.C. It can be used to measure and record the output of any approved type of thermal converter or the total output of a number of converters. The instrument can be arranged for left-hand zero, centre zero, or 2% raised zero. In the type designation the 'M/MV' denotes an instrument which measures millivolts and the 'S' denotes a single point recorder.

The Mark II Recorder is basically a D.C. potentiometer of the automatic self-balancing electro-mechanical type. The slide wire is mounted on the periphery of a rotatable disc and is comprised of standard resistance wire and calibration coils. The position which the slide wire occupies is dictated by the deflection of a galvanometer caused by the unbalance of e.m.f. in the

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circuit. The direction of galvanometer unbalance causes the slide wire disc to be rotated and to counter the unbalance effect in the e.m.f. circuit. When the circuit is balanced, the galvanometer occupies a centre zero position. This balance action is continuous and any movement occurs every 2 seconds.

Current is supplied to the circuit from a 1½-volt dry cell and, due to the current drain from the battery, automatic standardization is necessary. The method employed is to compare the voltage of a standard cell (fitted inside the case) with the voltage across a pre-determined portion of the slide wire circuit. Any unbalance causes the galvanometer to deflect, and by mechanical means a rheostat is rotated until the current circuit is balanced to the correct value. This standardization function is performed automatically every 45 minutes. The position of the slide wire is coincidental with the position of a black pointer on a scale and the pen on the chart. Exhaustion of the dry cell is indicated by a pointer at the upper left of the scale moving anti-clockwise to a red line. Under normal conditions the pointer remains undeflected to the left. Standardization can be performed manually at any time by depressing a knob protruding from the left-hand panel.

Chart speeds of 1, 2 and 3 inches per hour are obtained by moving a lever behind the chart plate.

This recorder is approved for use unsealed.

It should be noted that some instruments have a 9-7/8" calibrated width for the rated millivolt range whereas others have a calibrated width of 10" although the physical scale travel of the latter is limited to 9-7/8".

Approval includes instruments incorporating a re-transmission slide-wire.

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