ARTMENT OF TRADE AND COMMERCE

STANDARDS BRANCH

E-67

OTTAWA January 25, 1968.

NOTICE OF APPROVAL

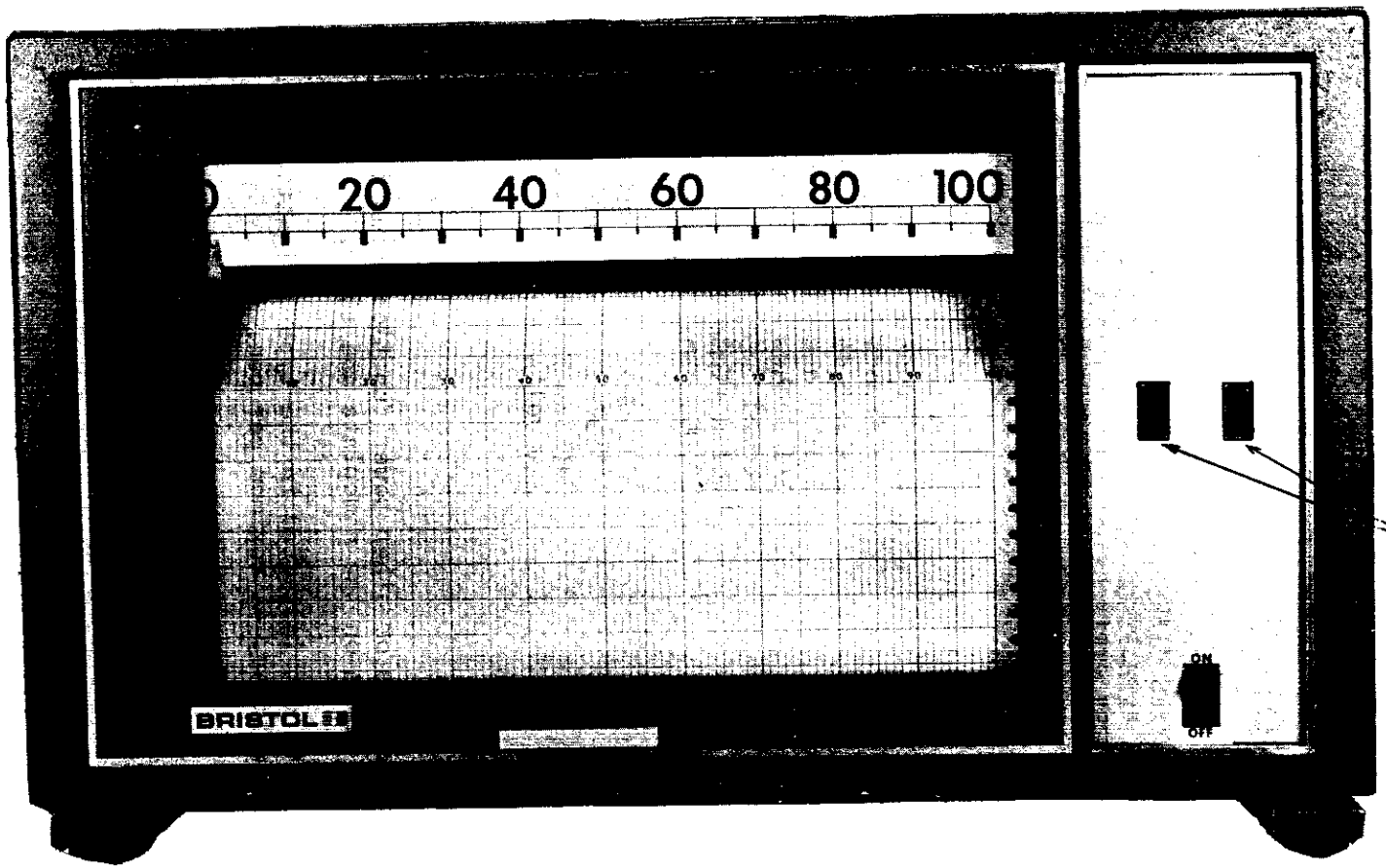
FOR

BRISTOL TYPES "1PH550-51" and "1PH551-51" SINGLE PEN AND TYPES "2PH-PH550-51" and "2PH-PH551-51" TWO PEN "DYNAMASTER" STRIP CHART POTENTIOMETER RECORDERS

	Apparatus
Millivolt Input *	0-10 to 0-1000 millivolts
Record	1-pen and 2-pen capillary or ball point continuous line
Standardization	Continuous automatic (Zener Diode)
Chart and Scale	11-inch calibrated width
Pen Speeds	1 or 3 seconds for full scale travel
Chart Speeds	3/4 inches per hour to 3 inches per second
Amplifier	Solid state only
Max. External Resistance	10,000 ohms maximum
Mounting	
Flush Panel	1PH550-51 1-pen and 2PH-PH550-51 2-pen
Relay Rack	1PH551-51 1-pen and 2PH-PH551-51 2-pen
Inking	Capillary pen and ball-point pen
Power Supply	120 volts 60 hz

* The Kilowatts, Megawatts or other power function which the millivolts represent shall be shown on the nameplate and scale.

Approved attachments not indicated in the type designation--Backset adjustable alarm switches, -4 maximum per pen.
Fluorescent light
Zero check switch


20
40
60
80
100
BRISTOL
ON
OFF
ZERO CHECK
SWITCHES

Description

The types "550" and "551" Dynamaster Recording Potentiometers are the high speed, self-balancing null balance type and each recorder is built up of six component assemblies.

1. Potentiometer Circuit The components that make up the circuit are the sensing element, a measuring slidewire, calibrated resistors, and a voltage source which is supplied from the highly regulated zener power supply in the amplifier. It is within this circuit that a comparison is made between the unknown signal and the known signal which is the voltage developed across the measuring slidewire.

2. Syncroverter This unit converts the dc unbalance voltage from the potentiometer circuit into an ac error signal.

3. Input Transformer This transformer provides insulation between the potentiometer circuit and the amplifier circuit and also raises the magnitude of the error signal to a level that is acceptable to the amplifier.

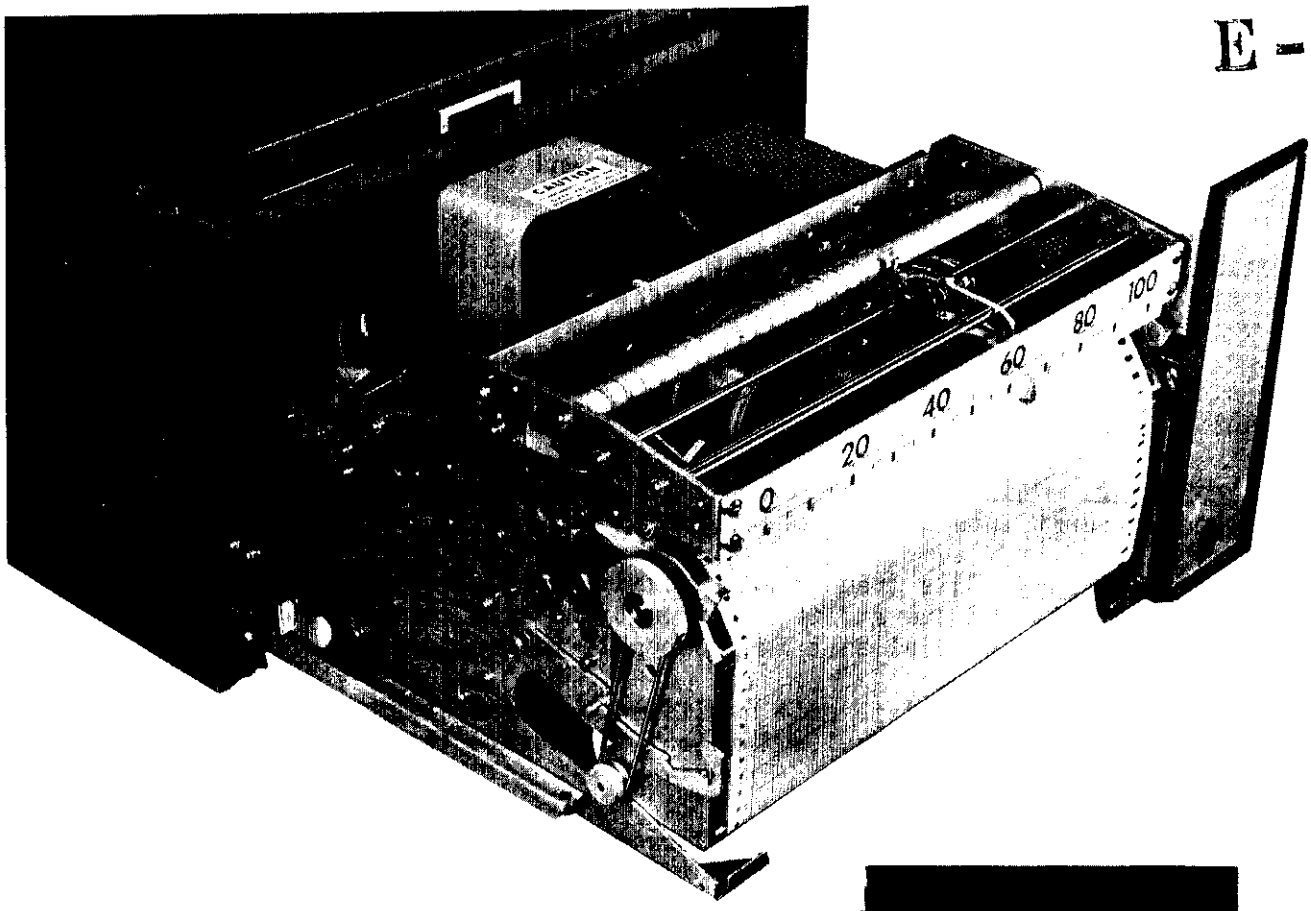
4. Solid State Amplifier This unit amplifies the error signal from the input transformer to a power level sufficient to operate the two-phase balancing motor.

5. Servo Balancing Motor The amplified error signal causes the balancing motor to drive the slidewire contact in the direction necessary to null the error signal and balance the potentiometer and at the same time driving the recording mechanism.

6. Recording and Indicating Mechanism An indicating pointer shows the value of the measured variable on a calibrated scale and at the same time records the same value on the chart.

The types "550" and "551" Dynamaster measure an unknown emf by comparing it with a known emf and electrically balances the two quantities so that no current flows in the external circuit. The position of balance is indicated by the position of the pointer on the scale and the pen on the chart.

Cards for the various ranges covered by this approval are in the form of plug-in modules. Etched circuits are used along with hard gold low resistance mating connections. The millivolt range of each module will be marked on the card.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20
40
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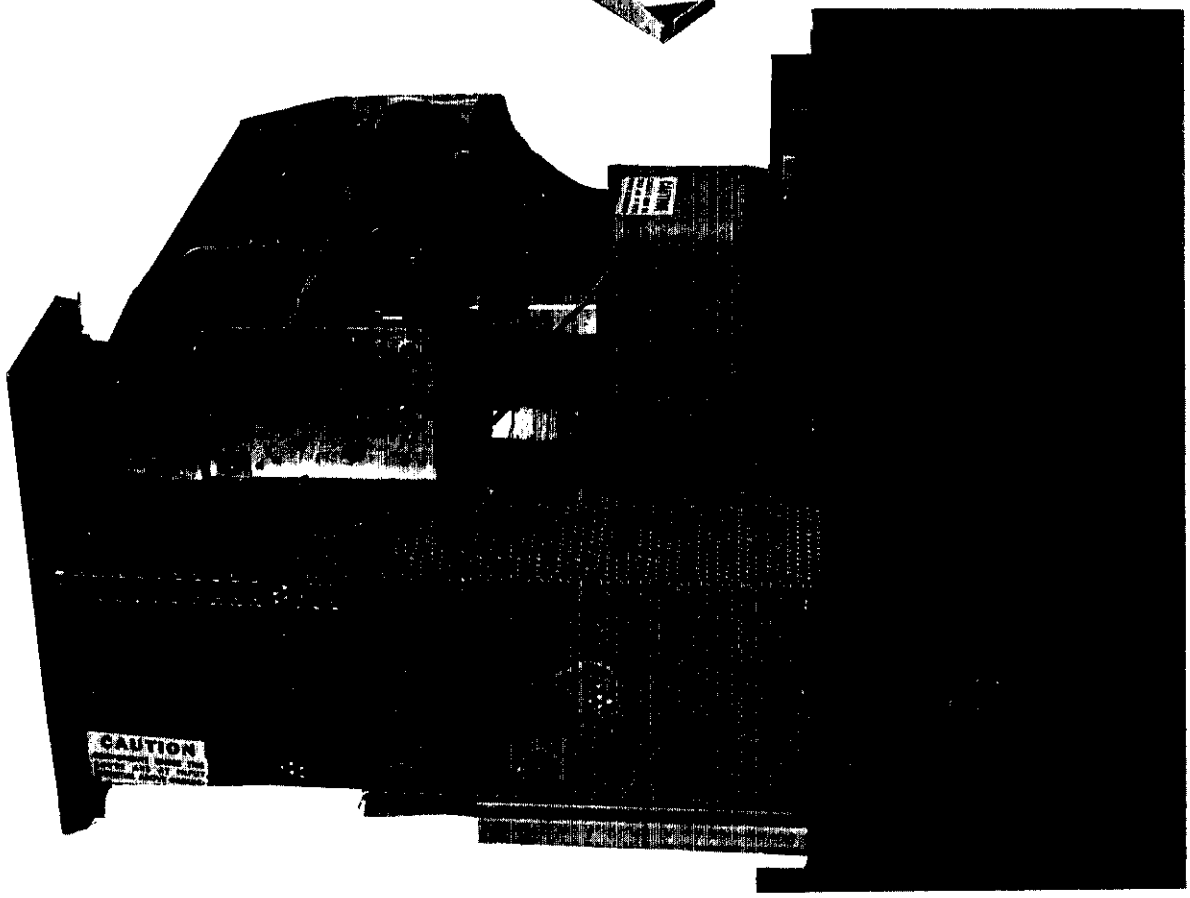
CAUTION

This approval does not cover -

(i) The Table-top model
(ii) The Tuck-away door.

The door on the approved types is gasketed and can be locked to keep out dust and to prevent access to the adjustments and switches by other than authorized personnel, and only recorders with this type of door are covered by this approval.

The only controls on the front panel will be the power supply switch and the zero check switches. One switch for the single pen recorder.

All calibration controls are internally mounted, the gain control is mounted on the side of the amplifier, and the source resistance adjustment is on the input filter card inside the measuring circuit module. This adjustment optimizes instrument response for various values of transmission line resistance up to a maximum of 10,000 ohms.

Approval granted to:

The Bristol Company of Canada Limited,
Rexdale,
Ontario.

J. S. T. Swanson,
Chief, Standards Laboratory,
Standards Branch.

for W. J. S. Fraser,
Chief, Electricity & Gas Division,
Standards Branch.

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