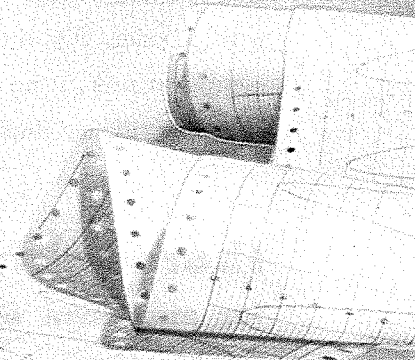
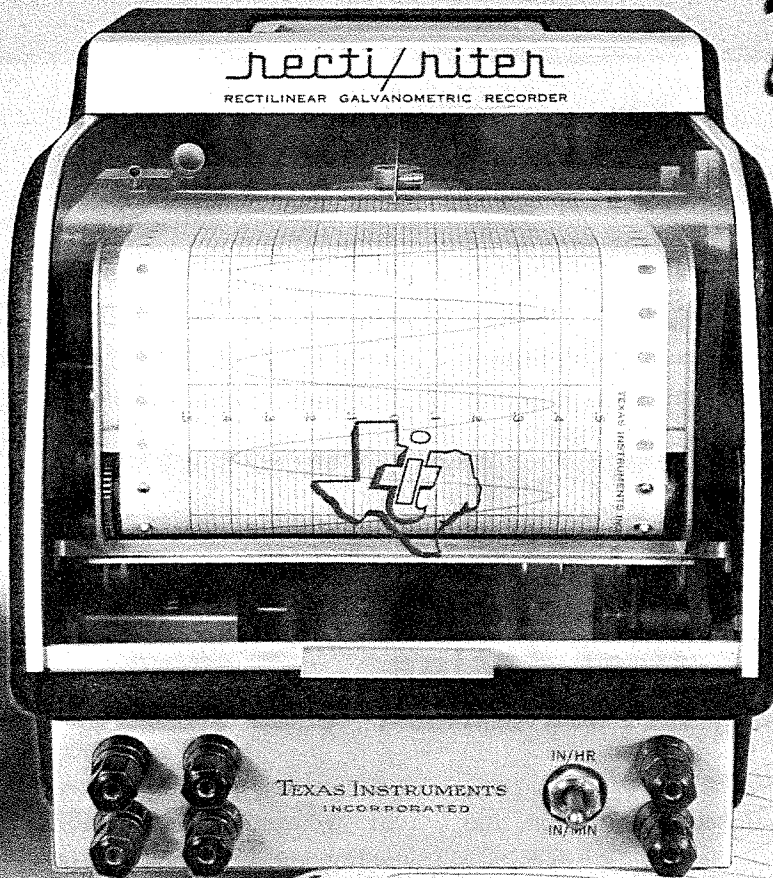
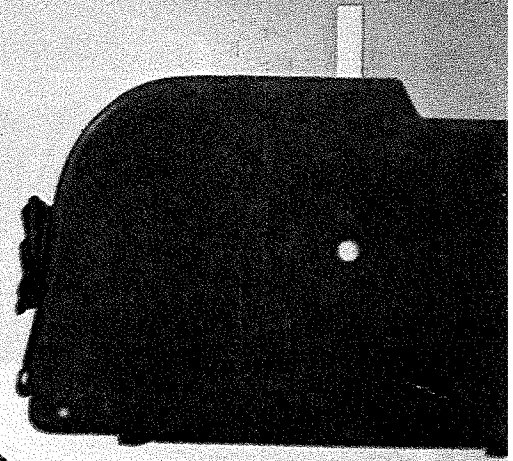
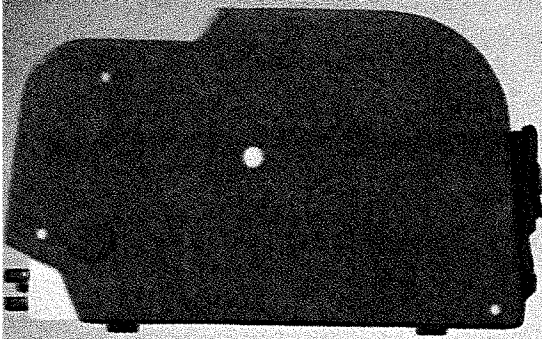


TI

# rectilinear recorder



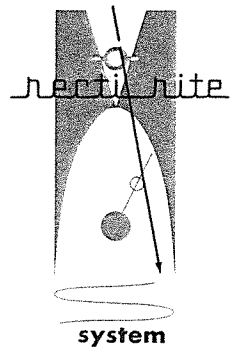
# TEXAS INSTRUMENTS

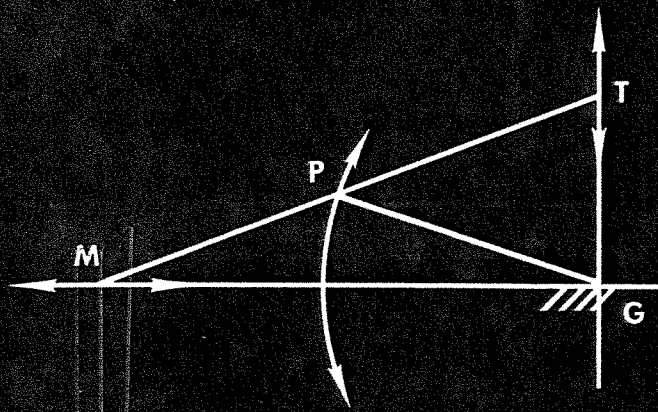
INCORPORATED

INDUSTRIAL INSTRUMENTATION DIVISION

3609 BUFFALO SPEEDWAY • HOUSTON, TEXAS • CABLE: HOULAB

featuring exclusive





The exclusive "recti/rite" system is an error-free linkage arrangement that satisfies basic trigonometry in changing curvilinear motion to true rectilinear motion. The system is based on the principle illustrated at left.

"MT" represents the writing pen; "T", the pen point; "PG", the swinging galvanometer metering arm; and "G", the fixed pivot of the meter movement. Then, if "PM", "PT", and "PG" are equal, "M", "T", and "G" would always be points on the circumference of a circle whose center is at pivot point "P". If, in addition, "M" is limited to fore-and-aft motion along line "MG", then "T" will always have linear motion perpendicular to line "MG". In the "recti/rite" system,  $PG/PM = PM/PT$ .

## rectilinearity for quicker, easier data reduction

The "recti/riter" is the *first* galvanometer-actuated recorder with true straight line motion. Its exclusive "recti/rite" system inscribes a signal in its true shape on a rectilinear chart—in a form that can be measured with a ruler. No time-consuming interpolations or computations... no apparent "negative" time or other curvilinear illusion. Recorded wave forms are

directly comparable to those seen on oscilloscopes or those plotted from formulae.

The unique "recti/rite" system is simple and trouble-free. Each moving part of this low friction system is counter-balanced and pivots have jeweled bearings... to assure uniform writing pressure over full 4½-inch deflection.

## thoroughly practical design

### for maximum operating time and minimum 'down' time

The refinements and conveniences of the "recti/riter" save valuable operator time in set-up, operation, and maintenance.

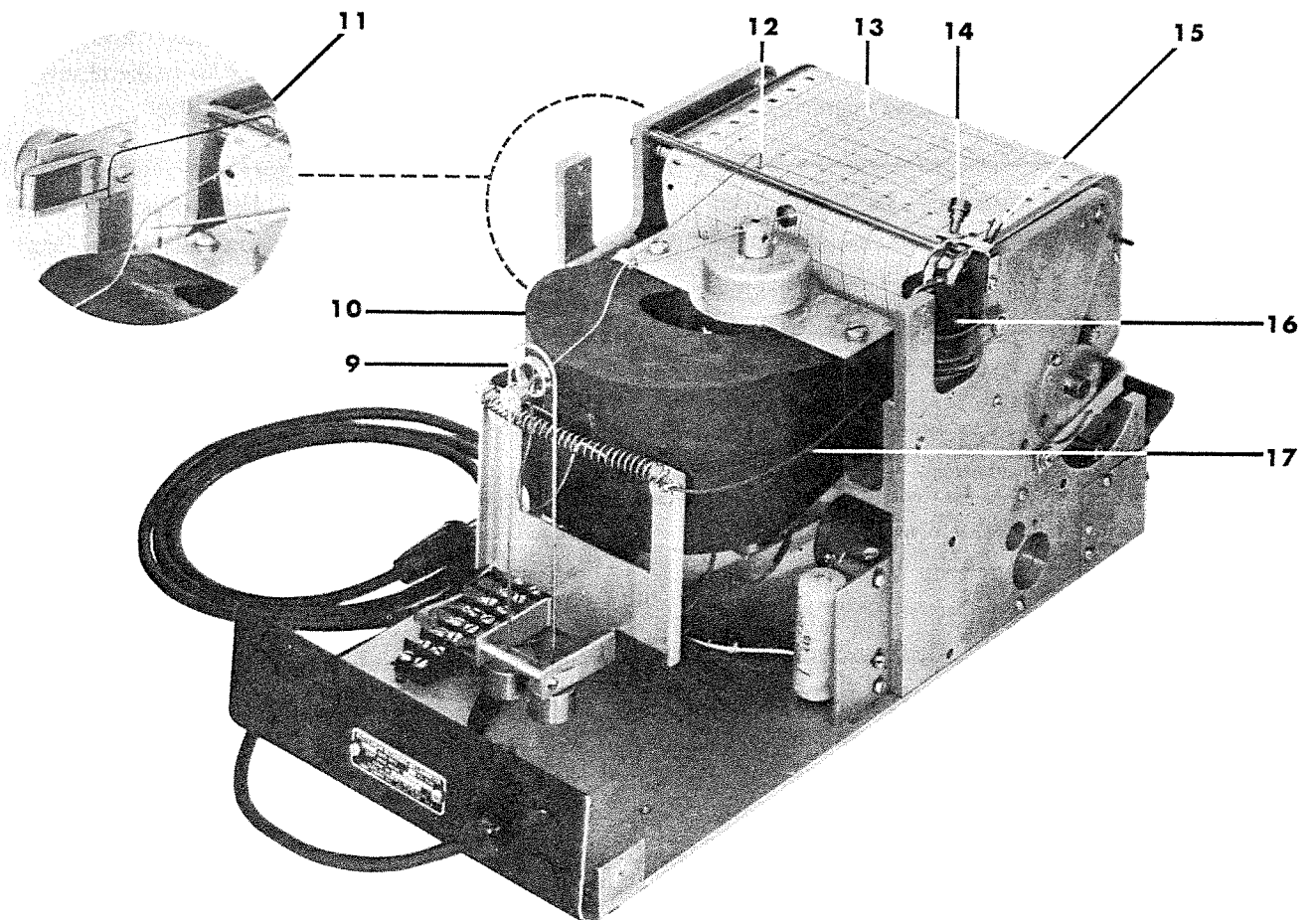
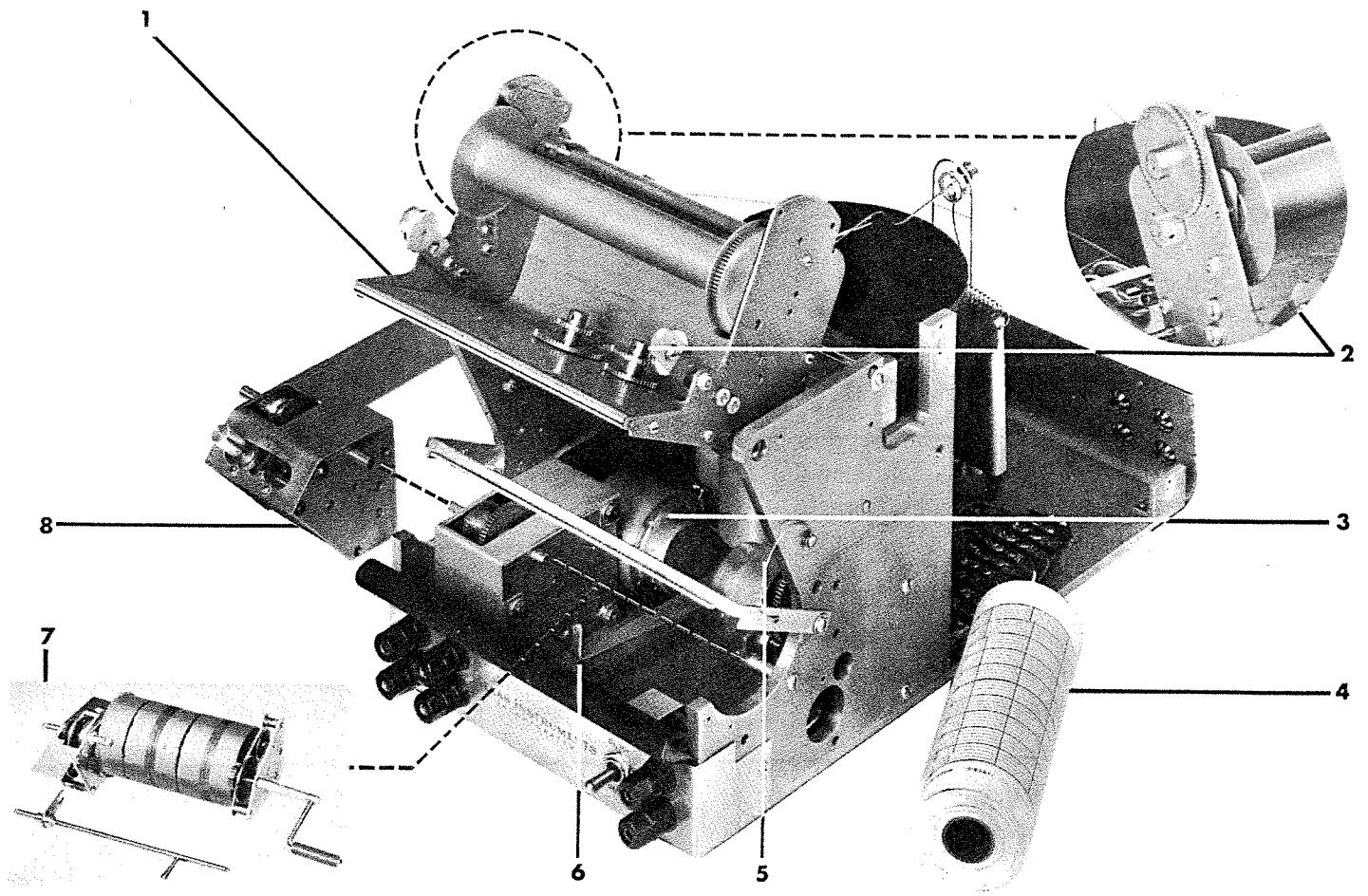
#### front access

*Without disassembly* the operator can — from the front of the instrument — flip the power switch... make connections to the signal terminals... observe the chart from a standing or seated position... slide the transparent access door out of sight and out of the way... check the visible ink supply level... fill the closed inking system... adjust the zero position of

the writing pen... change chart rolls... select any of 10 chart speeds... pull out the chart for examination and let the automatic take-up rewind it... and make chart notations on the "writing desk" area of the chart carriage.

#### structural simplicity

This compact, portable instrument consists of a one-piece dust cover over a frame on which are mounted interchangeable unit sub-assemblies. Removal of the dust cover makes every working part completely accessible—and removable—without further disassembly.



## interior design features

**1 fast chart reloading** — No disassembly. With door open, chart carriage swings out into load position.

**5 automatic take-up** — Rewinds chart after pull-out for inspection — while unit is operating.

**2 chart speed change gears** — Extra sets of gears on standard models allow for 10 chart speeds.

**6 front-located zero adjust** — Accessible when door is open, yet out of the way of accidental movement.

**3 chart drive** — AC drive shown. DC and spring-drives are also available. Flatted shafts connect to external drive.

**7 spring-drive** — Optional spring-drive mechanism allows recorder operation independent of electrical power supply.

**4 rectilinear chart** — Standard transparent 6-inch rectilinear chart has 4½ inches active width.

**8 chart speed change transmission** — Optional "gear shift" speed changer for instant selection of any of five basic speeds during operation.

**9 exclusive 'recti/rite' system** — Shock resistant linkage straightens the arc described by the galvanometer metering arm.

**13 'writing desk' chart table** — Exclusive TI design permits operator to make chart notations while unit is recording.

**10 large alnico v magnet** — Gives high output torque and permanent stability to the D'Arsonval galvanometer movement.

**14 easy ink filling** — Performed at front of instrument with access door open. No disassembly required.

**11 timing** — Marker pens to write on the chart margins are available as optional equipment. Actuators are supplied for 6, 12, 28-volt or 115V/60 cycle operation.

**15 closed ink system** — Ink is guarded from contamination, evaporation, and spillage.

**12 writing pen** — Non-corrosive, durable metal alloy pen has long service life with complete freedom from tip breakage.

**16 large capacity ink well** — Transparent well allows ink level to be seen from front of recorder when chart carriage is lifted.

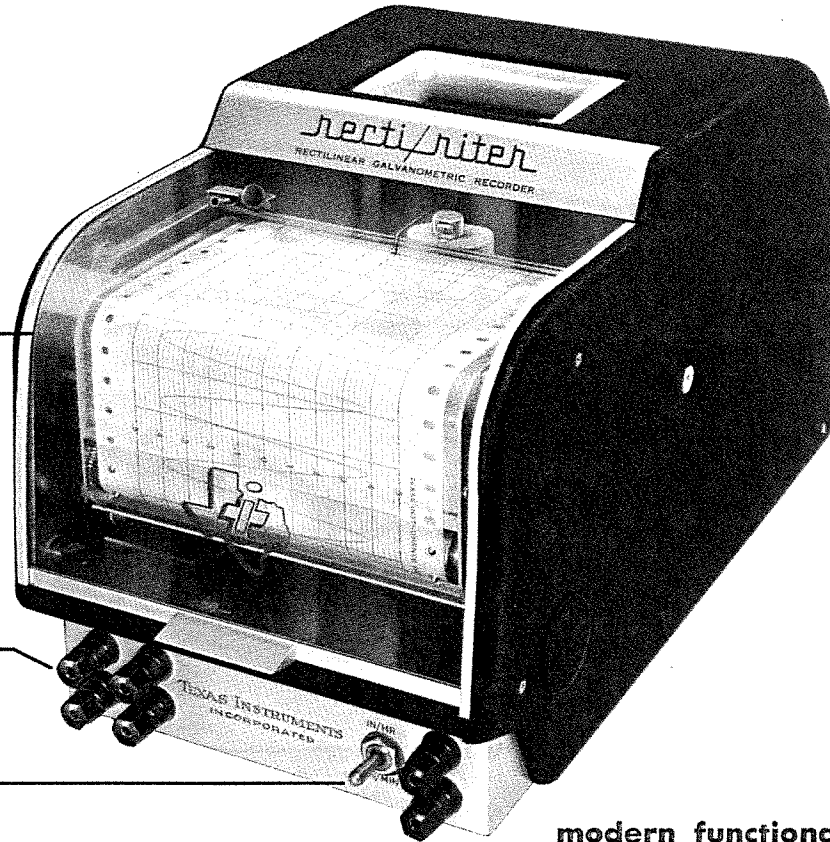
**17 dependable ink flow** — Carefully balanced flow forces produce a constant thickness of ink that dries rapidly without running.

# exterior design features

**DISAPPEARING ACCESS DOOR** — all routine operations can be performed without disassembly after sliding up the transparent access door.

**FRONT SIGNAL TERMINALS** — three sets of terminals are front-mounted for easy access.

**3-POSITION SWITCH (OR LEVER)** — increases five basic speeds to ten by selecting rates in either inches per minute or inches per hour.



## modern functional design

The *Recti/riter* was styled by Painter, Teague and Petertil, nationally known industrial design firm. The instrument is finished with a charcoal brown wrinkle surface and satin aluminum trim. Here design follows function to give you a recorder as attractive as it is useful.

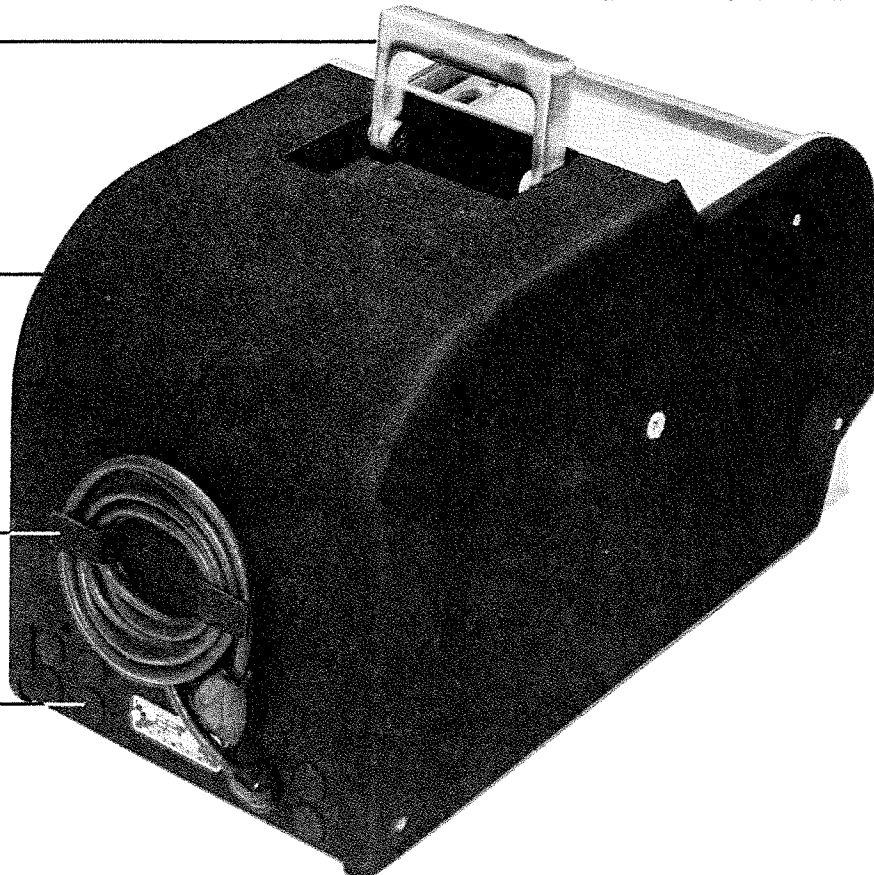
← **LIFT FLAP TO SEE INTERIOR DESIGN FEATURES**

**INTEGRAL CARRYING HANDLE** — positioned for optimum balance . . . hinged to fold flush when not in use.

**ONE-PIECE DUST COVER** — easily removed dust cover allows front access when installed . . . complete access when removed.

**CORD STORAGE BRACKET** — provides convenient storage for the six-foot, heavy duty power cord.

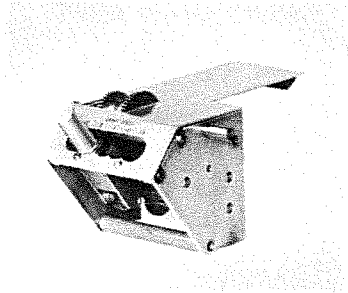
**REAR TERMINAL PROVISIONS** — six rear knockouts allow for optional rear-mounted signal terminals.



# recti/riter

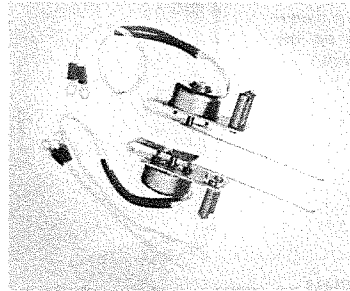
## accessories

"Gear shift" chart speed changer transmission, right-hand or left-hand timing marker pens and actuators, rear-set terminals.



"gear shift"  
chart speed  
changer  
transmission

internal lighting, shock mounts, panel mounting fittings, paper in many calibrations, ink in different colors, and others.



timing  
marker pens  
and actuators

## specifications

### recorder general

Weight (Electric Drive) . . . . . 27 lb  
Weight (Spring Drive) . . . . . 30 lb  
Dimensions . . . . . L, 15 in.; W, 8 $\frac{1}{4}$  in.; H, 9 $\frac{1}{4}$  in.  
Volume . . . . . 0.66 cu ft  
Bench Area . . . . . 0.86 sq ft

### recorder drives

AC Model . . . . . 115 volts, 60 cps, 8 watts  
(220 volts and 50 cps available)  
DC Model . . . . . 6, 12 or 28 volts, 10 watts  
Spring-Drive Model . . . . . 4 hr to 10 days one winding  
(depending on chart speed)  
External . . . . .  $\frac{1}{4}$ -in. flatted drive shaft provided

### recording chart

Chart Size . . . . . Standard 6-in. translucent  
rectilinear  
Chart Length . . . . . 100 ft  
Chart Speeds . . . . . 0.75, 1.5, 3, 6, and 12 in./min  
or in./hr  
Chart Calibration . . . . . Standard types available

### meter movement

Input Current . . . . . 1 ma full scale (4 $\frac{1}{2}$  in.)  
deflection  
(Additional current ranges available on request)  
Input Resistance . . . . . 1,500 ohms  
Source Resistance  
(for critical damping) . . . . . 20,000 ohms  
Undamped Natural Frequency . . . . . 2 cps  
Pen Speed . . . . . 0.25 sec full scale (4 $\frac{1}{2}$  in.) deflection  
(under critical damping)  
Sensitivity . . . . . 0.45 in./100 microamperes  
Accuracy (dc) . . . . .  $\pm 1\%$  of full (4 $\frac{1}{2}$  in.) scale

### timing markers

Input Voltage (Volts) . . . . . 6 12 28 DC, 115/60 cps



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HOW TO ORDER THE TI

# Single Recti/writer

January 1, 1958

Without "Gear Shift" Chart Speed Change Transmission

With AC Drive			With DC Drive			With Spring Drive		
Model Number	Marker Pens	List Price	Model Number	Marker Pens	List Price	Model Number	Marker Pens	List Price
RRMA - X - X	None	\$ 465.00	RRMD - X - X	None	\$ 540.00	RRMS - X - X	None	\$ 550.00
RRMA - X - 1*	1 Marker pen	495.00	RRMD - X - 1*	1 Marker pen	570.00	RRMS - X - 1*	1 Marker pen	580.00
RRMA - X - 2*	2 Marker pens	525.00	RRMD - X - 2*	2 Marker pens	600.00	RRMS - X - 2*	2 Marker pens	610.00

With "Gear Shift" Chart Speed Change Transmission

With AC Drive			With DC Drive		
Model Number	Marker Pens	List Price	Model Number	Marker Pens	List Price
RRMA - T - X	None	\$ 540.00	RRMD - T - X	None	\$ 615.00
RRMA - T - 1*	1 Marker pen	570.00	RRMD - T - 1*	1 Marker pen	645.00
RRMA - T - 2*	2 Marker pens	600.00	RRMD - T - 2*	2 Marker pens	675.00

Note: Specify 6, 12, or 28 Volt when ordering DC Drive

Note: Transmission not provided with Spring Drive

\* When ordering Marker Pens Specify 6, 12 or 28 Volt or 115 Volt 60 cycle actuators

Model Number	Accessories	List Price
P-1	Single Panel Mount	\$ 49.00
P-2	Double Panel Mount	59.00
S-1R	Shock Mount Assembly	39.00
	Ink (Red or Green)-pint	3.85
	Extra Instruction Manuals	2.00
VM	Line Voltage Monitor	79.00
R *	Rear Set Terminals	10.00

Chart Drive Motors

110 Volt, 50 cycle	- - - - -	\$ 6.80
220 Volt, 50 cycle	- - - - -	6.80
220 Volt, 60 cycle	- - - - -	6.80

Chart Paper for Standard Ranges on Separate Schedule.

\* Front Set Terminals standard. Rear Set Terminals available -- if required, specify "R" after model number of recorder.

Note: All prices listed are subject to change without notice.