

STRIP CHART RECORDER

It records one or more variables with respect to time. It is a X-t recorder.

A strip chart recorder consists of:

1. A long roll of graph paper moving vertically.
2. A system for driving a paper at some selected speed. A speed selector switch is generally provided. Chart speed of 1-100 m/s are usually used.
3. A stylus driving system which moves the stylus in a near exact replica or analog of the quantity being recorded.

A range selector switch is used so that input to the recorder drive system is within the acceptable level.

A. Paper drive system: The paper system should move the paper at a uniform speed. A spring would may be used but in most of the recorder a synchronous motor is used for driving the paper.

B. Marking Mechanism: There are many types of mechanism used for making marks on the paper. The most commonly used ones are:

1. Marking with ink filled stylus. The stylus is filled with ink by gravity or capillary actions. This requires that the pointer shall support an ink reservoir and a pen, or capillary connection between the pen and a pen reservoir.

In general red ink is used but other colours are available and in instrumentation display a colour code can be adopted.

2. Marking with headed stylus. Some recorders use a heated stylus which writes on a special paper. This method overcomes the difficulties encountered in ink writing systems.

3. Chopper Bar. If a chart made from a pressure sensitive paper is used a simple recording process is possible. A V-shaped pointer is passed under a chopper bar which presses the pen into the paper once per second thus making a series on the special paper. In fact this system is not purely continuous and hence is suitable for recording some varying quantities.

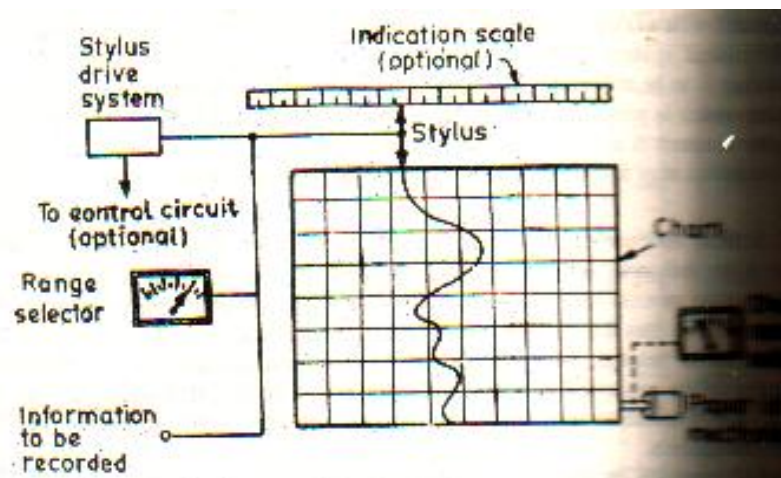
4. Electric stylus marking. This method employs a paper with a special coating which is sensitive to current. When current is conducted from the stylus to the paper, a trace appears on the paper. It is clear that the electric stylus marking method has a wide range of marking speeds, has low stylus friction and a long stylus life. The disadvantage is that the cost of paper is very high.

C. Tracing system: There are two types of tracing system used for producing graphic representation.

1. Curvilinear system. In the curvilinear system, the stylus is mounted on a central pivot and moves through an arc which allows a full width chart marking.

If the stylus makes a full range recording, the line drawn across the chart will be curved and the time intervals will be along the curved segments.

2. Rectilinear system. It is noticed that a line of constant time is perpendicular to the time axis and therefore this system produces a straight line across the width of the chart. Hence the stylus is actuated by a drive cord over pulleys to produce the forward and reverse motion as determined by the drive mechanism. The stylus may be actuated by a self-balancing potentiometer system, a photoelectric deflection system, a photoelectric potentiometer system, or a bridge balance system. This system is usually used with thermal or electric wiring.



Source: <http://mediatoget.blogspot.in/2012/04/strip-chart-recorder.html>