

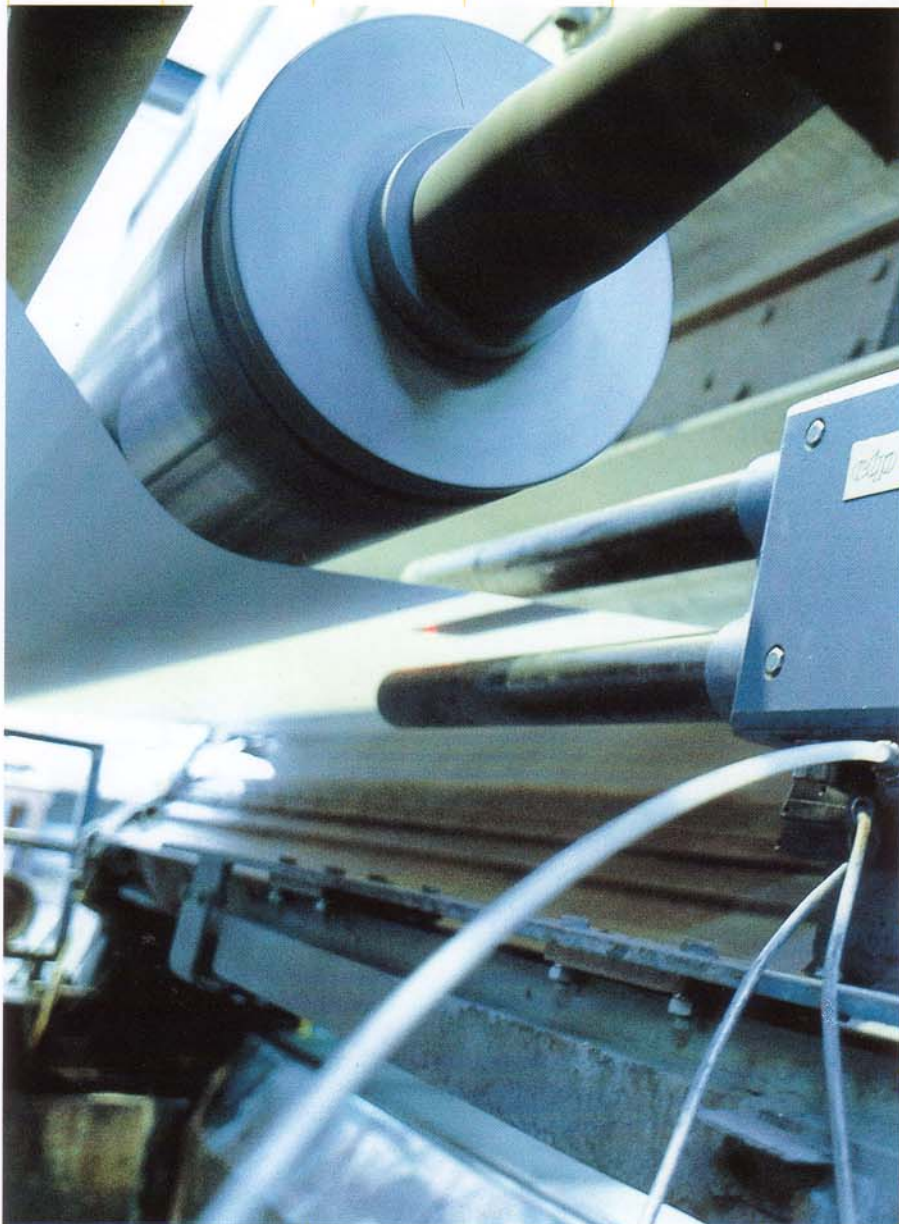


F.SENSOR

THE LASER BEAM'S VISION
AT THE HEART OF THE PROCESS

TECHPAP 

AN ON-LINE FORMATION SENSOR



THE DEVICE

THE MEASURING HEAD

It is U-framed, composed of two tubes of anodized aluminium connected to a casted casing. The sheet is analyzed by transparency as in a traditional visual examination. The measurement is carried out in a set position up to a distance of about 60 centimeters from the edge of the sheet. The sensor is connected to the reading case by a shielded cable (standard length : 100 m, maxi 300 m).

THE ELECTRONIC SYSTEM

Located in a rack, it is composed of a data processing module and a table-type recorder. The rack is delivered in a chest and can be installed in a 19 inch cabinet. The formation index displayed is a representative global indication of the formation of the sheet. It's a number which can vary between 0 and 1 000, the "0" value indication corresponding to perfect formation.

An example :

- A very good written printing paper gives a reading of about 40.
- A corrugated paper gives one of about 300.

The smallest difference that an initiated eye can detect between two papers corresponds to about two to three points. This index is displayed on a numeric indicator and transmitted to the recorder. A magnifying system ensures recording with a sensitivity of 50 or 100 points full scale which gives a definition to the order of one or two points.

The quality of this device is the result :

- of a simple conception,
- of a series of improvements achieved after numerous test campaigns on different machines.

All the connections are assembled at the back.

In this way it is possible :

- to repeat recording from a distance,
- to scan the value of the index to have it figure on the log-book.

EASY TO USE
RELIABLE
HIGH PERFORMANCE
STURDY

THE RESULTS

- The formation index elaborated in this way :

- correlates very well to the visual observation of the paper,
- is independent of the observer, of the size of the flock, of the basic weight, of the possible presence of pinholes, of flapping of the sheet,
- is easy to interpret (global index represented by a single value).

- The concept of the measure head warrants a particularly reliable continuous operation :

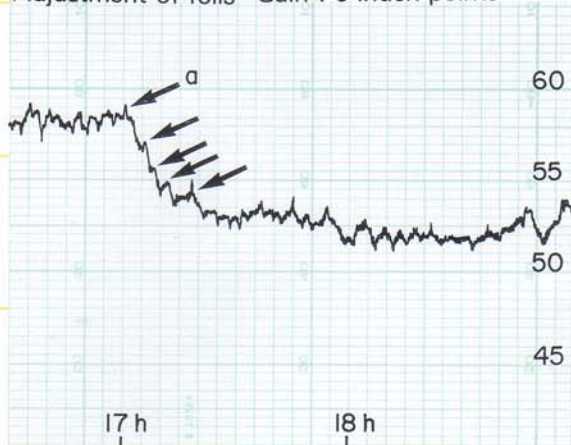
- temperature in use (up to 80 °C), humidity (up to 90 %),
- constant cleaning of the two windows by circulation of compressed air,
- use of a HE-NE laser.

- This apparatus warrants :

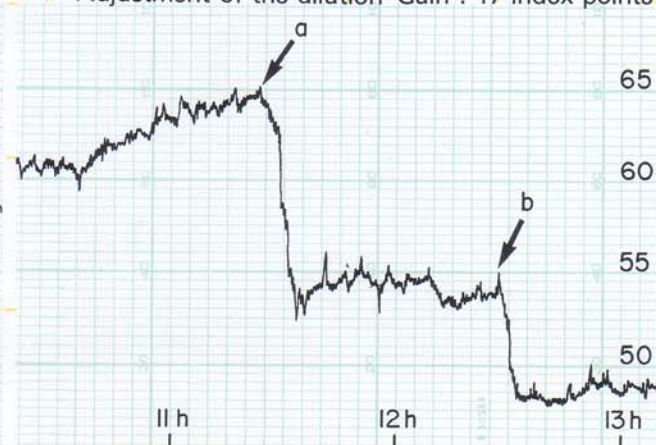
- the permanent and immediate surveillance of the evolution of all parameters which influence the formation of the sheet (composition of the pulp, refining, percentage of recycled broke, dilution, drag-rush ratio, drainage...),
- the presentation of a quality surveillance of the paper along the roll.

Examples : ADJUSTEMENT OF FOILS AND DILUTION

Adjustment of foils Gain : 5 index points



Adjustment of the dilution Gain : 17 index points



CALIBRATION DEVICE

In order to obtain a reproducible formation index, CTP developed a device (patented) which can be installed on the measuring head and simulates the running paper sheet.

This device allows the operator to obtain a standard and constant formation index and is used for :

- calibration of F-SENSOR made by CTP,
- checking their operation from time to time in normal use.



THE INSTALLATION

The measuring head is designed to be connected to the frame of the machine. It is, in most cases, placed on the back side just before the pope roll.

The rack containing the electronic system and recorder is placed within the operator's reach. It should always keep your eye on it.



TECHPAP 

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