



SEMITRONIK

**FABRIC PROFILE SYSTEM TO MONITOR
AND CONTROL THE SPEED OF STENTER MACHINE
WHILE HEAT-SETTING / DRYING / FINISHING**

FABRIC TEMPERATURE PROFILE SYSTEM

WHY AUTOMATION IN HEAT-SETTING ?

Up to now heat setting processes relied on laboratory findings, which were transferred to production conditions. This method has serious disadvantages, particularly when larger fabric runs are involved. For example 'over' and understanding is possible, because the borderline from drying to heat-setting conditions is not identical with laboratory test result, the reason being that with large fabric runs, variations in the operating conditions in a dryer can have far-reaching effects. A serious dissipation of energy has to be tolerated in order to have adequate safety margins at the expense on economy. The usual practice of following for a safety margin when establishing the contact time, means more energy consumption and less efficiency. The 'SEMIRONIK' Automatic Heat setting control system optimizes your drying and heat-setting processes by measuring the differential temperature in the drying section of the stenter and automatically controlling the fabric running speed.

OPERATING PRINCIPLES OF 'SEMIRONIK' PROFILE SYSTEM

While the fabric is being processed inside the processing chamber, temperature controlled air is emitted from the nozzles. The air cools down according to the heat consumption of the fabric i.e. through water evaporation and heating of the fabric. If the temperature of the air is measured as it leaves the fabric in the return air flow space between the nozzles, the difference between the temperature of the air supplied and the air for recirculation will show how great the transfer of energy at the product was. If no difference in temperature can be ascertained this means that the fabric temperature and the air temperature are the same. The measurement of differential temperature serves, therefore, to determine indirectly, with the aid of resistance probes, the transfer of energy at the fabric web and therefore, the fabric temperature. These measuring sensors do not require any special care of maintenance. They are robustly made, industrially proven and do not incur any maintenance costs. The entire process data acquired as regards the determined differential temperatures, is displayed in the form of a bar graph. At the same time the display provides information of the preset value the absolute air temperatures in the various zones and the machine speed.

THE FUNCTION OF THE SYSTEM

The entire profile of fabric temperature is displayed and speed of the stenter is controlled automatically ensuring fabric heat-set at desired temperature and with required dwell time even.

The system also makes possible to identify the transition point from drying to heat-setting and appropriate utilisation of this knowledge brings you following advantages which upto now seemed to be unattainable.

- Increase production output.
- Minimisation of energy consumption.
- Simplifies the operation.
- Available in affordable price.
- Improved consistent quality.
- Reduces the production cost.
- Absolutely no maintenance compared to system based on infra-red or pyrometer type sensor.

The facts discussed above clearly indicates the money invested on this system can be recovered in a very short period thus the investment is economically advisable.

SYSTEM DESCRIPTION

This system consist of

1. Control unit
2. Temperature measuring sensors

The basic two models are available suitable for any make stenter machine.

MODELS AVAILABLE

○ FABRIC TEMPERATURE PROFILE SYSTEM MODEL FTP-501

For measurement of temperature of running fabric and with automatic control for speed of the stenter machine with or without dwell time controller.

○ FABRIC TEMPERATURE PROFILE SYSTEM TO MONITOR AND CONTROL TEMPERATURE OF FABRIC AND MOISTURE CONTENTS MODEL FTP-502

- Auto RPM of exhaust fan or damper for best evaporation efficiency.
- Auto speed control of machine during drying or finishing process proportional to require fabric moisture content.
- Alarm for :
 - a) Variation in squeezing efficiency of mangle.
 - b) Sleepage of V belt of air circulation fan.
 - c) Blowing of fuse of any air circulation fan.
 - d) Improper in & out air circulation due to improper insulation or air leakage or un-balancing of fan etc.

THE SYSTEM IS AVAILABLE FOR MEASUREMENT AND AUTOMATIC CONTROL OF

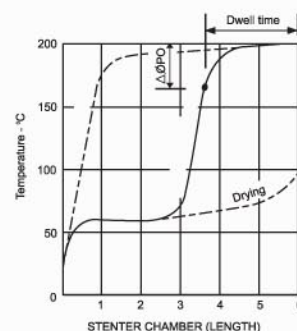
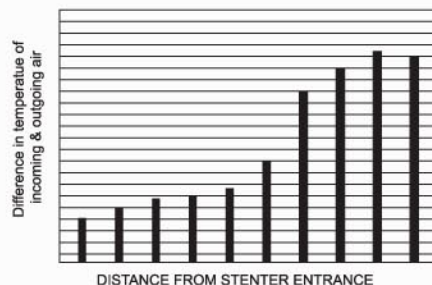
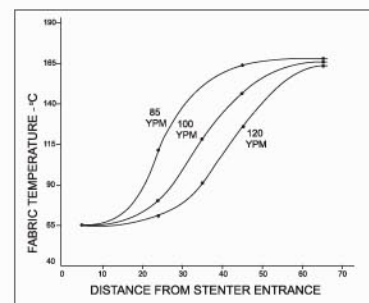
- Fabric temperature in running fabric.
- Fabric moisture.
- Exhaust air moisture content.
- % of over / underfeed or / shrinkage / elongation of no. of / pick / course cm or inch.
- Width of the fabric.
- Speed of the machine.
- Meterage produced per shift/day and machine efficiency etc.

COST EFFECTIVE PROCESSING WITH EQUIPMENT TAILORED TO YOUR NEEDS

In the textile finishing industry too, works economy aspects are steadily gaining significance. Automated process sequence are controlled by constant monitoring of all important measurable variable i.e.

- Production speed
- Time record
- Working temperature
- % of over / underfeed or / shrinkage / elongation or no. of / pick / course cm or inch.
- Exhaust moisture contents
- Production
- Energy consumed
- Fabric temperature
- Fabric width control

Those governs the process, as well as process optimisation and documentation of the process cycle, alleviate the work load for the operatives and factory management, increase the operational reliability and optimise quality and efficiency. 'SEMIRONIK' offer interesting solutions for optimisation of all process sequences.



For further details, contact